TEXTILE TECHNOLOGY DIGEST

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Abstracts

(An explanation of the classification used in the Digest was published in the January (1949) issue (Vol. 6, No. 1) on the page facing the Index to Authors)

FIBERS A

Natural fibers A 1

Advances in cleaning cotton at gins. F. L. Gerdes. *Textile Bull. 75*, 39-46 (Aug. 1949).

The operation of the cotton gin is reviewed and the developments in gin cleaning methods, necessitated by the advent of mechanically harvested cotton, are described. The advantages of the new cleaning equipment and its good and ill effects on cotton fiber quality are noted.

GOEDECKE'S 1950 COTTON VARIETY MAP OF THE UNITED STATES AND MEXICO. Hallettsville, Texas, Otto Goedecke, 1950. 17 p.

The cotton growing belt of the U. S. and Mexico is divided into 5 sections, each of which is shown in outline-map form. The percentages of the different types of cottons grown in each section are given and depicted graphically by circles divided to show the respective percentages. Also, for each section is given the average fiber data on cottons tested from the areas shown. The publisher states that it is hoped that additional information on the fiber properties can be given in subsequent editions.

Having trouble with new Acala cotton? Mack F. Stansbury & Carroll L. Hoffpauir. *Textile World 100*, 95, 318 (May 1950).

(Based on AIC-262, "Detection of 'Honeydew' on Raw Cotton," Southern Regional Research Laboratory.) Some new Acala cotton has "honeydew" on it, caused by aphids that have not completely digested plant sap they have eaten. This caused the cotton to be sticky and lap up on the rolls. A test for honeydew based on alcoholic alpha-naphthol solution has been devised. A description of this test and how to use it is given.

Industrial development of ramie fiber in China.

Chien Chu. (Doctoral dissertation, 1946, University of Minnesota.)

Quality of retted flax. R. W. Moncrieff. *Textile Mfr. 905*, 243, 245 (May 1950).

The mechanism of retting is reviewed and the superiority of Belgian flax is noted. A large part of the credit for the quality of Courtrai (Belgian) flax is attributed to the retting process. The recent work of Lanigan (see below) is described briefly and its importance to the flax industry of England and Northern Ireland considered.

Relationship of fiber quality to bacterial flora in flax retting. Geo. W. Lanigan. *Nature 165*, 516, 517 (Apr. 1, 1950).

Describes experiments in retting Australian and Belgian flax in which it was found that the superiority of the Belgian flax was due to the bacteria *Cl. felsineum*. Attempts are being made to introduce *Cl. felsineum* into commercial retting in Australia.

Study of fleece-marking products. J. Meybeck & C. Schirle. *Bull. de l'Institut Textile*, No. 18, 25-39 (Apr. 1950); *in French.*

The authors have made a systematic study of a whole series of fleece-marking products based on mixtures of suinters and fats, solvents, rosin in some cases, weighting and colored pigments. These products have been tested by sheep-breeders, in the pen, in the open air, or on the move, from point of view of their application (fluidity) and resistance to weather and rubbing. All the fleeces marked in this way were submitted to a scouring test. Most of the products were found to be suitable on the first tests, although some were less suitable or insufficient; but all were entirely removed on scouring. They therefore show a marked progress over commercial products in current use which remain more or less fixed on the wool after scouring.

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Treatment of flax and hemp. K. C. Menzel. *Melliand Textilber. 30,* 385-88 (Sept. 1949); *in German.*

This article discusses all the usual working methods for the preliminary treatment of flax and hemp. An improvement in the method of transporting the material in retting flax is indispensable. The cheapest method of shortening the time of retting and the one with probably the best prospects consists in re-using the old retting water. The removal of woody matter in the green state and chemical decomposition are only to be recommended when the raw material is appropriately chosen.

Artificial fibers A 2

Acceptance of nylon by the consumer. J. B. Quig. *Am. Dyestuff Reptr. 39,* P329-30 (May 15, 1950); *Rayon & Syn. Tex. 31,* 59-60 (June 1950).

The many favorable chemical and physical properties which have obtained a wide customer acceptance for nylon are discussed.

Artificial fibers and allied fields. Namerto Cruz, Jr. Philippine Islands. (Commonwealth). PB 100 358, July 1949. 116 p., drawings, tables. *Bibl. of Technical Reports 13,* 296 (June 16, 1950). Microfilm $4.75; Photostat $15.00.

A recent comprehensive survey of the industry as practiced in Japan. Many details are given and operations covered include the synthetic fibers Kuravilon and Amilan. Ramie, pulp, paper, rayon machinery and high pressure hydrogeneation studies are also covered.

New Swiss fiber. Anon. *Textile Mercury & Argus 122,* 738 (May 5, 1950).

Preparations for the production of the nylon-like "Grilon" fiber in Switzerland have advanced so far that it is considered likely that this new fiber will be introduced to the market in 1951. A factory is at present under construction in Ems (Canton Graubuenden). The fiber is made from a polyamide based on phenol called "Lactam" and will be manufactured by the "Holzverzuckerings AG Ems," while the spinning, spooling and stretching is being done by the Fibron SA, Ems, an organization financially and personally joined to the Holzverzukerungs AG. Leading representatives of the textile and textile engineering industries of Switzerland have joined the organization, Swiss machinery makers having developed

machinery needed for the production of the fiber.

Polyvinylchloride. Franz Kainer. *Melliand Textilber. 31,* 255-60 (Apr. 1950); *in German.*

The plastics which are obtained by the insertion of chlorine or other foreign atoms or atomic groups into the polyvinyl chloride molecule can be processed into very valuable, completely synthetic threads or fibers, the best-kown of which are the PeCe and PeCe 120 fibers of the former I. G. Farbenindustrie Aktiengesellschaft, the Saran fiber of the Dow Chemical Company and the Vinyon N fiber of the Carbide and Carbon Chemical Company. The present article deals with the properties of these fibers together with the processes for their manufacture and further treatment.

Polyvinylchloride fibers. Franz Grabe. *Melliand Textilber. 31,* 261-62 (Apr. 1950); *in German.*

The article opens with a brief historical summary of the development of synthetic fibers containing chlorine and proceeds to describe the polyvinyl chloride fibers, which have not been subjected to after-chlorination. They have been marketed by the Societe Rhodiaceta-Lyon since 1941. A dry spinning process for these fibers is based on the solubility of the product in a mixture of carbon disulfide and acetone. Three special fibers have been developed so far, known respectively as Rhovyl, Fibrovyl and Thermovyl. The author discusses their technological properties and compares them with other polyvinyl fibers. These remarks are followed by a description of the textile technical purposes of each of the fibers and hints are given for their further processing, such as dyeing.

Possibilities of rayons in the woolen industry. C. M. Whittaker. *The Cobbler 2,* 5-8 (1949-50).

In a lecture, the many possibilities of producing blends of rayon and wool are discussed. While the enormous varieties possible present great opportunity for the cloth designer, they present a corresponding number of problems for the dyer. In particular, the properties of Courtaulds' Fibro, Fibroceta, Fibrolane and Rayolanda fibers are noted as to their applications in blends.

Synthetic fibers: an historical survey of the development of some synthetic fibrous materials. H. V. Potter. *Chemistry & Industry No. 51,* 879-85 (Dec. 17, 1949).

The historical development of synthetic textile fibers is reviewed, starting with cellulose and its

derivatives and progressing through protein fibers to true synthetics. Polyurethanes, polyethylene, Terylene, and Orlon are described along with older fibers, and the properties of numerous natural and synthetic materials are compared.

YARN PRODUCTION B

Application of high polymers to cotton in sliver form. Edw. A. Murray. (Doctoral dissertation, 1946, University of Texas.)

CAUSES OF NEPS IN INDIAN COTTON YARNS. A. N. Gulati. (Technological Bull., Series B, No. 43). Indian Central Cotton Committee Technological Laboratory. 28 p. Price: Re. 1/–.

Reprint from *Indian Textile J.* See TTD: *7*, 84, 173.

THE FIBROGRAM; INVESTIGATIONS ON THE INFLUENCE OF FIBER LENGTH AND ITS DISTRIBUTION, ON THE WORKING PROGRESS IN PAUL'S DRAW FIELD, AND ON THE PROPERTIES OF YARN AND FABRIC. Stig Löfgren. (Doktorsavhandingar Vid Chalmers Tekniska Högskola, No. 5). Gothenburg, Sweden, Chalmers Tekniska Högskola, 1950. 144 p. Price: Kr. 15:–. *In English.*

To study the influence of fiber length and its distribution on the properties of sliver, yarn and fabric, other characteristics of the material being constant, viscose rayon staple of 26 mm, 34 mm and 42 mm (1.5 den.) was used as the spinning material. Tests were run using the different fiber lengths singly and in mixtures of specially selected proportions. The work reported is discussed under the following chapter headings: I—Survey of previous work; II—Definitions; III—Statistical computations on the fiber movement; IV—Sliver testing methods used and the control of them; V—Drafting under simplified conditions; VI—Influence of the setting distance; VII—Influence of the draft ratio; VIII—Influence of drafting on sliver thickness distribution; IX—Drafting under industrial forms; X—Fiber length distribution and yarn properties; and XI—Fiber length distribution and fabric properties. Results are presented in the Summary and 123 references are given in the Bibliography.

Mill of today. 8-19. Robt. Z. Walker. *Textile Bull. 74*, 52, 54, 57 (Dec. 1948); *75*, 55-6, 58 (Jan. 1949); 45-6, 48 (Feb. 1949); 71-2, 74-5 (Apr. 1949); 54, 56-7 (June 1949); 46, 48, 50 (July 1949); 49-50, 52 (Aug. 1949); 53-4, 56, 58 (Oct. 1949); 85-6, 88, 90 (Dec. 1949); *76*, 53-4,

56, 58, 60 (Jan. 1950); 50, 52-4, 56 (Mar. 1950); 46, 48, 49 (May 1950).

This is a continuation of the series on practical mill operating problems. Subjects covered in Part 8-19 are as follows: 8—Pickers—(the beater section), 9—Pickers—(beater and fan speeds), 10—Pickers—(evener motions), 11—Pickers—(calender section), 12—A general outline of carding, 13—Maintaining the card feed plate, 14—Maintenance of the card lickerin assembly, 15—Card maintenance—the flats, 16—The card cylinder, 17—Card clothing, 18—Careful stripping, the base of good carding, 19—The importance of card grinding. (For Parts 1-7 see TTD: *6*, 185.)

Modern trends in carpet yarn manufacturing. S. B. Hyde. *Whitin Rev. 15*, 10-18 (Nov. 1948).

Modern trends in carpet yarn manufacturing are noted. The discussion is limited to the carding, spinning, twisting, reeling, and dressing operations. Machines and techniques employed are described.

Processing Dynel staple fiber on the cotton system. R. W. Gaines & E. Stowell. *Rayon & Syn. Tex. 31*, 61-2 (June 1950).

Data are given for processing Dynel staple fiber on the cotton system. Procedures for opening and pickings, settings for cards, drawing, roving and spinning frames are given.

Rayon fabrics by the Verney Mill. Anon. *Whitin Rev. 14*, 1-12 (Mar. 1947).

The machinery used by the Manchester, (N. H.) plant of Verney Mills, Inc., in the production of fabrics of acetate warp yarns and spun rayon filling yarns, is described. Much of the spun rayon filling is of the type called Himalaya or slub yarn. Long staple rayon fibers are used.

Story of Stanley Mills. Anon. *Whitin Rev. 12*, 1-8 (April 1945).

The machinery developed and installed in Stanley, Mills (Stanley, N. C.), for the production of yarns made from blends of rayon, acetate and wool, is described. Staple lengths of 2-3″ were used. The machines used in each of the various processes in yarn production are noted.

Fiber preparation B 1

Carbonizing wool. A. Von Manderfeld. *Melliand Textilber. 30*, 424-25 (Sept. 1949); *in German.*

Carbonization was relegated to the background in

the manufacture of cloth owing to the admixture of staple rayon, but has become a vital necessity at the present day, now that very burry wools or dirty pulled wools are being handled again. The article also deals with sulfuric acid carbonization together with the procedure followed and explains how to avoid carbonization stains, finally going into the dyeing of carbonized woolen goods.

Conditioning fibers. Edw. Hurst (to B. F. Perkins & Son, Inc.). USP 2 509 148, May 23, 1950.

A continuous method of removing foreign bodies from a sliver of fibers which consists in, drawing the sliver into the form of a gossamer like web to bring the fibers into substantial parallelism and position the foreign bodies in substantial parallelism therewith, subjecting the web to the action of first means to divide the foreign bodies transversely into shorter lengths, subjecting the web to the action of second means to split the lengths of foreign bodies lengthwise into particles disposed in substantial parallelism with the fibers, and in subjecting the web to centrifugal force, vibrations and suction to remove the particles therefrom.

Continuous wool scouring apparatus. Geo. C. Weinpel (to Botany Worsted Mills). USP 2 509 464, May 30, 1950.

In apparatus for wool scouring, a bowl for wash liquor, a compartementalized conveyor longitudinally extending in the bowl and adapted for free flow of wash liquor through its compartments, a compartmentalized feeder for discharging wool into the compartments of the conveyor, the feeding length of the latter being confined to an upper area of the bowl whereby a lower area of the bowl is provided as an initial settling area, and a plurality of force feed means for withdrawing preliminary settled dirt-and-wool-grease-carrying wash liquor for a plurality of zones at the base of the bowl.

Improvement on the No. 11 and No. 12 dust and waste extractor. Anon. *Saco-Lowell Bulletin 20,* 4-5 (Feb. 1948).

The accumulation of heavy dust and dirt, leaf fragments, and other heavy impurities which collected in the corner and along the bottom of the housing of the Saco-Lowell No. 11 Dust and Waste extractor was found to be eliminated by a slight change in design. The 4 steps involved in effecting the change-over are described in detail.

Is faulty analysis responsible for "specky" cloth? Anon. *Saco-Lowell Bull. 20,* 11-12 (Feb. 1948).

"Peppery trash" and similar light foreign particles, which can lower cloth grades, can be eliminated by the No. 11 Dust and Waste extractor. An instance is given of a mill seeking to solve the problem by analysis of waste extracted rather than the waste present in the yarn and fabric.

Means for opening bales of fibers. John Hughes. USP 2 509 823, May 30, 1950.

Means for opening bales of fibers, comprising in combination a casing, an elevatable platform therein, trucks provided on the platform for carrying bales, 2 horizontal rows of rollers provided in the casing above the trucks, one row being disposed above the other row, for removing fibers from the bales and throwing them into the uppermost part of the casing, and an outlet provided in the casing for extraction of removed fibers from the uppermost part of the casing.

Method of and apparatus for scouring wool. Bryan Leonard. Can. P. 460 369, Oct. 18, 1949.

An improvement in methods of scouring wool, comprising the steps of floating wool in a bath of scouring liquid under such conditions that the dirt can settle freely out of the upper part of the bath, propelling the wool through the bath by directing a series of well-dispersed sprays of such liquid against it from a series of points above the level of the bath and at such an angle as to force the wool in the desired direction and to subject the wool to a scouring action, the wool floating freely except as the action of the sprays may momentarily submerge it.

Models N2 and N3 blending feeders. Anon. *Whitin Rev. 12,* 12-13 (May 1948).

The operation of the N2 and N3 blending feeders is described and features of these machines are described. The N2 is equipped with a pin cylinder and is built for blending and feeding baled cotton. Model N3 is designed particularly for blending and feeding synthetic fibers, wool, cotton wastes, and card strips.

New drive for vertical opener. Anon. *Saco-Lowell Bull. 20,* 6 (Feb. 1948).

Describes briefly a new drive for the Saco-Lowell vertical opener which can be applied to existing equipment. The new assembly is now standard on all vertical openers. Illustrated with drawings and a photograph.

Opening and picking at Ponemah Mills. Anon.

Whitin Rev. 15, 1-6 (Oct. 1946).

The opening and picking equipment installed at Ponemah Mills (Taftville, Conn.) for running pimas, peelers, spun rayon, and blends is described.

Perlok system of tow stapling. J. L. Lohrke, Jr. *Rayon & Syn. Tex. 31*, 41 (June 1950).

Bands of continuous filament synthetic fibers are converted into staple by feeding the tow into rollers, to insure even tension, then into a breaking zone where the draft is sufficient to break the filaments. Control of staple length is obtained by means of breaker bars which throw the filaments out of line in the breaking zone. The front rollers carry the fibers to the crimp rollers which pass the fibers into a crimp-chamber, forcing them against the pressure of a trap door which causes the fibers to be bent back and forth to impart crimp. The crimp may be steam set, in the case of thermoplastic fibers, in a later operation if desired.

Process for cleaning animal fibers to prepare same for subsequent use in textile operations. Manuel Levin. USP 2 508 406, May 23, 1950.

In a process for cleaning animal fibers and preparing them for subsequent use in the manufacture of various types of cloths and felts, the step consisting of subjecting the fibers to a mixture of a sulfuric acid solution and a ketone effective to inhibit ionization of the sulfuric acid solution, the mixture containing not more than 20% water.

Process for cleaning animal fibers to prepare same for subsequent use in textile operations. Manuel Levin. USP 2 508 407, May 23, 1950.

In a process for cleaning animal fibers and preparing them for subsequent use in the manufacture of various types of cloths and felts, the step consisting of subjecting the fibers to a mixture of concentrated hydrochloric acid and a ketone effective to inhibit ionizations of the hydrochloric acid, the mixture containing not over about 8% water.

Processing of and lubricant for textile materials. Abraham Moscowitz (to L. Sonneborn Sons, Inc.). Can. P. 460 628, Oct. 25, 1949.

A substantially self-scouring lubricated textile material which comprises a textile material impregnated with a viscosity reduced petroleum mahogany sulfonate solution consisting of a hydrocarbon textile lubricating oil and substantially dissolved therein at least 28% alkali metal petroleum mahogany sulfonate solution in an organic substantially water immiscible solvent for the sulfonate, with an oxidation agent selected from the group consisting of oxidation agents having an oxidation potential in such solution by reason of "available" O_2 and those having an oxidation potental in such solution by reason of "available" Cl_2 in amount and for a period of time sufficient to yield for the 28% sulfonate solution a Saybolt viscosity at 100°F of not in excess of 600 seconds.

Wool scouring; old and new. I-II. R. Gutensohn. *Textil-Praxis 4*, 513-16 (Oct. 1949); 562-65 (Nov. 1949); *in German.*

This is a discussion of old and new methods of scouring wool, with special reference to the pH of the scouring liquors and damage to the wool fiber.

Carding and combing B 2

Apparatus for and method of conditioning textile fibers. Edw. Hurst (to B. F. Perkins & Son, Inc.). Can. P. 460 466, Oct. 18, 1949.

Apparatus for conditioning elongated wool fibers by the removal of foreign bodies dispersed therein comprising in combination, successive pairs of rotatable draft rolls for receiving an elongated sliver of elongated fibers having separate foreign bodies dispersed therein and drawing the same in a certain direction into a web to position the fibers in substantial parallelism and the bodies in parallelism therewith, a first pair of co-acting extender rolls for receiving and moving the web in the certain direction and dividing the foreign bodies into shorter lengths and transversely to the fibers and certain direction, a second pair of co-acting extender rolls for receiving and moving the web in the certain direction and splitting the shorter lengths of foreign bodies in substantial parallelisms with fibers and the certain direction, and operative connections between the pairs of rolls and the rolls of the pairs to rotate them in timed relation.

Card room waste is easily controlled. R. H. Pharr. *Textile World 100*, 72-3 (May 1950).

Non-preventable waste is that removed on purpose; preventable waste is that that should be eliminated. A waste factor should be set up for each process and type of raw material. This can be used as a standard by which to compare lots of cotton run. A weekly waste statement should be made, and a cumulative total of over and under standard kept. Hints are given on how to maintain waste standards on different operations.

Carding engine and the like. Arundel G. Arundel-

Evans. Can. P. 460 525, Oct. 25, 1949.

A carding engine of the type comprising a cylinder, a feeding device, a series of pairs of workers and strippers, and a doffer, pairs of workers and strippers being disposed around the greater part of the circumference of the cylinder, characterized in that the feeding device and the doffer are both disposed on one side of the cylinder, the feeding device being disposed above the doffer.

Feed plate. John L. Fonville & Alexander E. Barneycastle (to Camille Dreyfus). Can. P. 460 185, Oct. 4, 1949.

A feed plate for a carding machine having a lickerin, the feed plate having an upper plane surface and a bottom surface adapted to be supported on the carding machine, and a nose on the feed plate extending above the upper plane surface thereof and below the bottom surface thereof, the nose having its entire surface adjacent to the lickerin substantially concentric with the latter, whereby accumulation of fibers btween the nose and the lickerin is prevented.

Flat clearer. R. H. Lakhe. *Indian Textile J. 60,* 414 (Feb. 1950).

A description is given for making an apparatus for cleaning card flats using parts available in most textile mills. A traverse grinding roller is used but instead of the emery ordinary stripping fillet is secured to the grinding wheel.

Lap-handling system meets unusual demand. E. Dalton White. *Textile World 100,* 92-3 (May 1950).

Standard Knitting Mills uses a series of overhead tracks to carry picker laps from the picker room to each of 2 card rooms. The card rooms are 205 and 501 feet away, and across a stream. A selector switches long staple laps (by means of a trigger set by the picker tender) to one track; short staple laps to the other. A Mono-Tractor pushes groups of 4 laps to the card room, uncouples automatically, and either returns empty or brings back empty carriers. Illustrated.

Shortcoming of the carding engine. Andre Varga. *Can. Textile J. 67,* 59-60, 62 (May 26, 1950).

The functions of the carding engine are considered in relation to the duties it is expected to perform and a number of its more obvious shortcomings are discussed. The emphasis of the discussion is on woolen and worsted cards. The function and operation of the "Varga-breast" is described in some detail.

Waste end conveyor for card condensers. Anon. *Whitin Review 12,* 16 (Apr. 1945).

The Whitin Waste End Conveyor transfers ends from the condenser back to the automatic card feed by drawing the waste ends through a pipeline to the automatic feed. The continuous ends are broken to a suitable working length and at the same time are bloomed sufficiently to permit blending with the stock in the feed hopper. The units are available for, and adaptable to, any make of condenser.

Whitin's 40" full roller card. Anon. *Whitin Rev. 12,* 9-11 (April 1945).

The Whitin Rayon Card is substantially their regular cotton card. It features, however, 1) a double lap back feed, 2) a set of 6 worker and stripper rolls which is substituted for the regular top flats, and 3) a 2-coiler front. The character of the mechanical changes involved makes it a comparatively simple matter to convert any conventional flat card in good condition into this improved type of roller card.

Whitin's new model "J" comber. Anon. *Whitin Rev. 15,* 1-9 (Nov. 1948).

Features of the Model "J" comber are described and illustrated.

Whitin's model "L" cotton card. Anon. *Whitin Rev. 13,* 7-9 (Oct. 1946).

This is a detailed description of the Whitin Model "L" Cotton Card.

Drafting and roving B 3

Noneyebrowing cot. Edw. M. Rothermel (to The Dayton Rubber Co.). USP 2 507 869, May 16, 1950.

In combination, a drafting roll, a cot mounted on the roll and having a fiber contacting layer consisting of a pitted surface and a body of rubber-like material provided with a plurality of gas filled cells substantially uniformly distributed throughout the entire body comprising the layer, whereby, as the layer wears down in use new cells are presented which form a series of new pitted surfaces successively following each other, the layer being made from a composition of acrylic nitrile-butadiene copolymer and a gasifying agent decomposable at elevated temperatures, and subjected to such temperatures.

Pacific converter. Jas. H. Kennedy, Jr. *Textile World 100,* 75-84 (May 1950).

This article answers such questions as: what is

the converter, what are its advantages, how does it work, drafts and production, settings and adjustments, difficulties that may be expected, and others. Pictures, diagrams, and tables are used where needed. The converter makes tops direct from the tow, or a blend of tow, thus eliminating mixing, picking, carding, gilling, and combing. The machine will produce up to 118 lbs. per hour at 80% efficiency; and can be used for nylon, or rayon and wool blends; it has a total draft of about 20. It is used in layouts with pin drafters. Typical layouts and test results are given, along with settings and adjustments. Reprints of this paper are available from *Textile World*, 330 W. 42nd St., New York 18, N. Y. at 25¢ each.

Pressure device for drawing frames. Werner Naegeli (to Actiengesellschaft Joh. Jacob Rieter & Cie). USP 2 508 964, May 23 1950.

Weighting apparatus for textile drawing apparatus comprising a weighting arm, a plurality of upper drawing rollers having shafts, the weighting arm carrying a plurality of holders for the shafts of the upper drawing rollers, a support pin, the weighting arm being pivotally mounted on the support pin, elastic pressure producing means carried by the pin, and means contacting the weighting arm for applying the elastic pressure thereto for loading the weighting arm and, thus, the rollers carried thereby.

Staple fibers. V. Breslav. *Rayonne 6*, No. 2, 67-72 (Feb. 1950); 85-91 (Mar. 1950); 79-86 (Apr. 1950); *in French.*

From the Russian book, *Fundamentals of Spinning*, by Prof. V. Zotikov, (Moscow 1945) 3 excerpts have been made on the following subjects: The straightening of fibers by drawing; The region of friction (during drawing); The causes of irregularities arising from the drawing.

Stop motion for sliver condensers. John G. Kershaw & Patrick J. Malone (to Dominion Textile Co. Ltd.). Can. P. 460-718, Nov. 1, 1949.

In a sliver condenser having a pair of counter-rotatable shafts insulated from one another and mounted for movement towards and from each other, at least one pair of mating condenser rolls mounted on the shafts, each of the shafts being adapted to carry one pole of an electric circuit, a stop motion comprising an insulating sleeve between one of the mating portions and its respective shaft, at least one electro-conductor having a peripheral face parallel to the axis of the shaft mounted on the shaft adjacent but insulated from

the insulated portion, an electro-conductor mounted on the opposite shaft which is adapted to register with and contact the face, the conductors adapted to be normally retained apart by sliver to prevent contact of the face and the electro-conductor, and means adapted to urge the rolls and the conductor towards each other whereby contact is made between the face and the electro-conductor when there is no sliver between the tongue and groove.

Warner & Swasey Co.'s Pacific converter. Anon. *Can. Textile J. 67*, 56 (May 26, 1950).

Describes the new Pacific converter which is said to eliminate blending, picking and carding in the worsted and American systems. Sliver is produced from continuous fiber by: 1) cutting the fiber into predetermined equal or variable lengths, as desired; 2) separating the individual ends of fibers after cutting; 3) drafting the fibers into a thin sheet; 4) shuffling, i.e. further separation of the fibers by moving the upper fibers faster than the lower fibers; 5) rolling the cut sheet upon itself to form a continuous sliver of staple fiber; and 6) crimping the sliver for additional strength.

Spinning B 4

Constant tension speed-varying control for spinning frames or the like. Geo. M. Heller & Paul B. Reeves (to Reeves Pulley Co.). USP 2 507 904, May 16, 1950.

For use with a spinning frame or the like including a main shaft and an element driven from the main shaft through a vibratory path, means for controlling the speed at which the main shaft is driven by a constant speed power source, comprising stepless variable-speed transmission means interposed between the power source and the shaft, power means connected to adjust the output speed of the transmission means, a member shiftable oppositely from a neutral position to actuate the power means oppositely, and means operatively connecting the element to shift the member.

Mechanical doffing of spinning and like frames. The Brit. Cotton Industry Research Assn. Indian P. 39 983. (through *J. Sci. Ind. Research (India)*).

Comprising driving, starting and stopping means for the carriage, and means for unlatching the carriage.

Movement of the spinning regulator. W. E. Boltz. *Melliand Textilber. 30*, 560-63 (Dec. 1949); *in German.*

The operation of the spinning regulator is best understood by considering each of the individual components of the movement by itself. These components involve certain constructional features which make it possible to obtain any desired spinning diagram. It is shown how a practically constructed spinning regulator must be designed.

Proper application of Whitin bands. Anon. *Whitin Rev. 13,* 9-11 (Mar. 1946).

Long service life of long-draft bands is assured if the bands are properly applied. Suggestions are given for the proper application of bands.

Roller-bearing spindle. John L. Hilton (to Hoffman Tweedales Ltd.). Can. P. 460 606, Oct. 25, 1949.

In a textile machine, the combination with a spindle and a bolster, of a roller-bearing insert housed in the bolster, the insert having a body including parts of different diameters, and being flanged at its upper part and inturned at its lower end, and a race-receiving head, a roller race disposed in the head, and a footstep located in the lower part of the body, the body head, roller race and footstep being secured together as a unit.

Spinning break draft. C. D. Brandt. *Whitin Rev. 13,* 2-7 (Mar. 1946).

How break draft functions is dependent upon: 1) staple length, 2) hank roving, 3) twist in roving, 4) spread of rolls in back section, and 5) amount of break draft. The action of break draft is described briefly and results of research on break draft are summarized. Graphs are given showing 1) the effects of varying break draft with different back roll settings, 2) the effect of varying back roll spread with different drafts, and 3) a composite of 1 and 2.

Strand spinning and twisting mechanism. John J. McCann. USP Re 23 232 (2 321 404), May 23, 1950.

Twisting mechanism comprising a fixed strand receiving and guiding tube, a spinning pot below the tube in position to receive a strand therefrom, a second tube arranged for longitudinal reciprocation over the strand exit end of the first tube, and means for removably supporting on the second tube and within the pot a tube adapted to receive in collapsed form thereon a cheese formed centrifugally from a strand passing through the tubes and into the pot.

Vibration in spinning. Rudolph Thun. *Melliand Textilber. 31,* 236-38 (Apr. 1950); *in German.*

Describes the various types of vibration that occur during the spinning process and which cause variations in the yarn properties and gives a few hints on how to reduce their influence. If the yarn faults finally occur also in the drawing frame, their actual cause may be ascribed to those vibrations the frequency of which is determined by the machine, while their amplitude is fixed by the properties of the yarn. Considerable progress is still to be attained by the cooperation of experts who possess experience in the technique of spinning, and are also thoroughly acquainted with modern measuring and developmental technique.

Winding and spooling B 5

Automatic bunch building on bobbins. John G. Kershaw (to Dominion Textile Co., Ltd.). Can. P. 460 097, Oct. 4, 1949.

A bunch building mechanism adapted to act on the builder mechanism of a winding apparatus comprising a reduced traversing cam, means for driving the cam, a full traverse cam adapted to be freely rotatable with respect to the reduced traverse cam, a push out member adapted to be acted on by the reduced traverse cam to act on the builder lever when the full traverse cam is inactive, a clutch mechanism for interlocking the full traverse cam with the reduced traverse cam, the clutch means being urged towards engaging position and being adapted to normally engage after a complete turn of the reduced traverse cam, and including delaying means which in one position prevents engagement of the clutch and in another allows engagement, setting means adapted to set the delaying means and means operable by the angular building motion for tripping the delaying means into inoperative position.

Automatic chalking device for our filling bobbin winder. Anon. *Whitin Rev. 13,* 12-14 (Mar. 1946).

An automatic chalking device for the Whitin filling bobbin winder consists of a main support bracket, a rubber covered pressure roll to pull the bobbin through an idler roll to carry the bobbin, and a spring tensioned chalk tray. The operation of the device is described in some detail.

Breakages of continuous yarns. E. De Keyser. *Rayonne 6,* 47-52 (Feb. 1950); 41-3 (Mar. 1950); *in French.*

Part I is concerned with controlling breakage of yarn during spinning by careful processing. Part II is concerned with the most important causes for the breaking of the yarn during spinning.

Building staple rayon cops. August Vollmer. *Melliand Textilber. 31,* 249 (Apr. 1950); *in German.*

Staple rayon cops must be built up in a particular way, in order to avoid slippage of the layers of yarn, thereby leading to trouble in winding, beaming, sizing and weaving, lowering production and turning out defective goods. The cone must as far as possible have a length of 45-46 mm and be slightly concave. The number of windings up to the tip of the cop should be about 16 to 20, with about 30 to 40 at the base for a cone length of 42-50 mm. These figures apply for 20s to 30s yarns English count, and finer counts to correspond. The ratio of the windings should be 1:2 to 1:2.75. The start of the cone must not be blunt, but flattened and rise gradually. It is of advantage to have the paper tube crimped.

Design your own reeling diamond pattern. Robt. M. Harbeck. *Textile World 100,* 85, 324, 325 (May 1950).

Most mills have standardized on a traverse ratio of 16 to 9 for their skein reeling. The first number is the number of revolutions of the reel, the second, the number of reciprocations of the yarn. A series of diagrams shows the effect of different ratios on the skein. How to figure ratios, the width of the diamonds, the number of diamonds around and across the skein are all explained.

Double twist spindles. Regina. Indian P. 42 263 (through *J. Sci. Ind. Research (India)*).

A rotatable vertical spindle having an axial passage, a yarn guide fast on the spindle, a yarn package carrier, a yarn guide on the carrier and vanes on the carrier.

Model R worsted twister. Anon. *Whitin Rev. 16,* 31-4 (Feb. 1949).

The Model R worsted twister features reciprocating ring and spindle rails. It can build either filling wound or warp wound packages. Whichever type of wind is used, the total distance traversed by the ring rail never exceeds one-half the total length of the package.

Tension regulation. R. Duval. *L'Industrie Textile No. 761,* 157-61 (Apr. 1950).

The regulation of tension during winding and twisting is discussed. An apparatus for regulating the tension by means of traction of a freely turning bobbin is characterized by the fact that the yarn tension is controlled by the amount of yarn on the bobbin. Detailed diagrams of the apparatus accompany the article.

Winding crepe thread. Albert J. Dijksman, Derk Jan Overhard Nijkamp & Otto Anton Hubert Waters (to Am. Enka Corp.). USP 2 508 502, May 23, 1950.

In apparatus for the warping of rayon threads which includes means for supporting in a stationary, non-rotating unwinding position, a wound body of rayon thread of circular cross-section, and draw-off device for drawing thread axially from one end of a wound body supported on the means, the improvement that comprises thread guiding means disposed in the thread path between the wound body and the draw-off device a distance from the draw-off end of the wound body that is less than the radius of the fully wound body at its draw-off end whereby high speed warping of high twist thread may be effected.

Winding device. Wm. J. Elvin & Elmer R. Stahl (to Camille Dreyfus). Can. P. 460 515, Oct. 18, 1949.

In a device for producing yarn packages having a transfer tail, the combination with a rotating yarn support and a reciprocating ring rail for winding yarn onto the support of means for reciprocating the ring rail to produce a chaser motion with a transverse stroke of uniform length, means for superimposing a builder motion on the chaser motion by progressively raising the path of the uniform traverse stroke of the ring rail relative to the yarn support and progressively lowering the path of the uniform traverse stroke relative to the yarn support, and means for instantaneously extending the length of the downward traverse stroke of the reciprocating ring rail below the normal traverse stroke thereof, so as to cause the winding of a relatively small amount of yarn on the yarn support at a point spaced from the main body of yarn, the small amount of yarn being available for use as a transfer tail.

Winding of yarns. Harold M. Hibbert, John Holroyd & Richard H. Baines (to Camille Dreyfus). Can. P. 461 179, Nov. 15, 1949.

A beaming collar comprising a strip of thick pliant sheet material faced on both sides with a thinner sheet material, the thinner material on both sides projecting beyond one edge of the thicker material but to different distances and the thinner material on one side being pressed round the edge into contact therewith and with the thinner material on the other side of the thicker material, the collar having as a permanent set a curvature

about an axis at right-angles to the length of the strip.

Winding rayon. Wm. V. Henry (to Am. Enka Corp.). USP 2 508 516, May 23, 1950.

In an apparatus for winding threads and the like comprising a collecting device and a traverse member reciprocating lengthwise thereof including a thread guide arm, the improvement which comprises a freely rotatable thread guide roller having an annular thread receiving cam shaped groove around its periphery, a transverse extending shaft on the thread guide arm on which the rotatable thread guide roller is mounted for reciprocation with the traverse member, means for propelling the thread guide roller at an rpm substantially greater than the rpm of the collecting device, whereby the cam groove of the rotatable thread guide roller delivers thread to the collecting device in a path defined by the relative motions of the collecting device and the traverse member superimposed by an undulating path effected by the rotation of the thread guide roller.

Yarn support. Albert W. Keight (to Camille Dreyfus). Can. P. 460 813, Nov. 1, 1949.

In a yarn twisting and winding device for forming yarn packages on a hollow, thin-walled yarn support, a spindle assembly including a spindle and a spindle shaft thereon, and a mandrel adjustably mounted on the spindle shaft, the construction and arrangement of the mandrel being such that it frictionally engages the yarn support at spaced points intermediate the ends of the yarn support.

Yarn processing B 6

Guide requirements for the successful control of synthetic yarns. Jos. B. Shacklett. *Rayon & Syn. Tex. 31,* 65-6 (June 1950).

The development of better guides, required in processing the more highly abrasive synthetic yarns, is described briefly. New materials make it possible to adapt the guide to process requirements rather than the process to the guide. Guides are now supplied in bright, satin, or mat finishes.

Processing continuous filament synethetic fibers —Part II. Robt. A. Hargreaves. *Whitin Review 16,* 13-23 (Mar.-Apr. 1949).

Continues the discussion of the development of machinery for the processing of continuous filament synthetic fibers and briefly describes the features of several models of up-twister. (For Part I see TTD: *6,* 596.)

Strand drying apparatus. Pyam L. Pendleton (to Hampton Machine Co.). USP 2 507 678, May 16, 1950.

A device for heat treating a traveling strand which comprises: a reel housing, a reel insertable therein, the reel being adapted to be loaded with a plurality of parallel passes of continuous strand to form a layer, an inwardly disposed heat reflector affixed within the housing and an outwardly disposed matching heat reflector carried by the reel to provide a cooperating pair of opposed parallel heat reflecting surfaces arranged to permit passage therebetween of the strand layer when the reel is inserted in the housing, and a source of radiant heat of low mass interposed between the surfaces and cooperating therewith to focus heat upon the layer.

Special yarns B 7

Applying wound covering to elastic thread. Anton G. Seifried (to The B. F. Goodrich Co.). USP 2 509 372, May 30, 1950.

Apparatus for winding a covering about an elastic thread, the apparatus comprising an elastic thread supply, winding means, a flier between the supply and the winding means, a single driving means for the supply, the winding means and the flier, the driving means including a variable speed changer between the supply and the winding means collectively and the flier, and a second driving means providing continuous manipulation of the speed changer to continuously change the speed ratio of the supply and the winding means with relation to the speed of the flier throughout a covering operation so that uniform angularity of lay of the covering and uniform stretch characteristics of the covered thread are maintained throughout the length of the covered thread.

Composite textile yarn for use in papermaking felts. Edw. H. Hall. USP 2 506 667, May 9, 1950.

A composite textile yarn for use in weaving, comprising a roving of asbestos fiber plied with a reinforcing yarn of nylon, the nylon yarn being so constructed and arranged as to provide anchorage for the constituent fibers of the asbestos roving, thereby substantially to maintain the initial relation of the roving and yarn during weaving.

Process of making permanently set hard twist wool yarn. Robt. J. Jackson (to Bigelow-Sanford Carpet Co., Inc.). USP 2 509 347, May 30, 1950.

The process for producing hard twisted wool yarn, adapted to be woven as the pile in a pile fabric, which consists essentially in hard twisting a wool yarn in one direction only, reeling the twisted yarn into skeins, relaxing the tension in the yarn to cause kinks at intervals, wetting the skeins of yarn, setting the twist and kinks in the yarn by subjecting the skeins of wet yarn while in a relaxed tensionless kinky condition to a steaming treatment with saturated steam at a pressure of at least 5 lbs. and not over 40 lbs. per sq. in. for such a time that the severity of the steaming treatment does not exceed that represented by treatment of 30 min. at 40 lbs. per sq. in. pressure, and drying the skeins of yarn in a tensionless kinky condition, whereby the completed yarn has kinks at intervals when relaxed and is permenently set and resistant to untwisting and to twisting in either direction.

Treating glass fibers. Lawrence P. Biefeld (to Fiberglas Canada Ltd.). Can. P. 461 083, Nov. 15, 1949.

A strand composed of glass fibers lubricated against mutual abrasion and bound together by a coating comprising an oily material and a resin, each of the constituents being siloxanes.

Yarn products B 8

Acidproof rope. (Source missing). Ger. P. 748 969, Dec. 8, 1944. PB L 70 146. *Bibl. Sci. Ind. Reports 6,* 1219 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Cop-carrying device for braiding machines. Tillman T. Bunch (to Western Electric Co., Inc.). USP 2 506 772, May 9, 1950.

A cop-carrying device, which comprises a carrier, a spring formed into a tube and secured to the carrier at one point on the periphery of the spring, a cop-holder fastened to the spring at a second point on the periphery of the spring, whereby the spring fastens the cop-holder resiliently to the carrier, and a filler composed of vibration-damping material mounted in the spring in contact therewith for dissipating vibrational forces on the spring.

Packing. Wm. J. Elvin & Geo. L. McLuckie (to Celanese Corp. of Am.). USP 2 509 290, May 30, 1950.

As a new article of manufacture, a packing material comprising a plurality of associated lubricated cabled yarn elements, each of the cabled yarn elements consisting of a plurality of plied

yarns formed of several ends of multi-filament yarn of continuous, high tenacity filaments of regenerated cellulose formed by stretching and saponifying continuous filaments having a basis of an organic acid ester of cellulose, the association of the lubricated cabled yarn elements in the packing material consisting of a plurality of the lubricated cabled yarns as a core and a plurality of sheaths of the cabled yarns braided about the core.

Yarn testing and numbering B 10

Yarn numbering systems. Hans Böhringer. *Melliand Textilber. 31,* 236-38 (Apr. 1950); *in German.*

This is a discussion of the decimal number yarn numbering system proposed in Germany as weight per kilometer, designated the gK system by the Textile Institute, and the Grex system discussed by the ASTM, which provides for the weight of 10,000 meters as yarn number. A comparative table of the systems is presented.

FABRIC PRODUCTION C

Yarn preparation C 1

Device for radio frequency treatment of filamentary material. Theo H. Story. USP 2 503 779, Apr. 11, 1950.

Fabric or yarns, especially in the form of a warp sheet, are dried by di-electric heating by passing the fabric or yarns alternately over and under electrode rods connected to a radio frequency oscillator.

Sizing and weaving research. Anon. *Textile Mercury & Argus 122,* 771, 773-75 (May 12, 1950).

See TTD: *7,* 450.

Sizing of continuous filament rayon yarns. S. D. Weaver. *Textile Weekly 45,* 492, 494 (Feb. 24, 1950).

See TTD: *7,* 450.

Weaving C 2

Check strap for looms. Ingram Dickinson (to Southern Belting Co.). USP 2 509 676, May 30, 1950.

A check strap for looms comprising a closed loop of flexible material having parallel side walls and upper and lower edges of substantially equal length, and right and left hand U-shaped plugs cemented within the opposite curved ends of the

loop and extending symmetrically toward each other in opposite directions within the parallel side walls of the loop, each plug having a feathered upper edge and a lower edge of substantial thickness, thus presenting inclined contact surfaces for engagement by a picker stick swinging within the loop and both sides of the plugs being tapered and merging smoothly into the parallel walls of the loop and so presenting no obstruction to the free movement of the picker stick.

Design and production of simple stripes and checks. A. T. C. Robinson. *Silk & Rayon 24,* 656, 658, 661 (May 1950).

This discussion includes the design and production of check taffeta, fancy yarn stripes satin stripes on crepe-de-chine, striped honeycomb, dyed-yarn stripe on moss crepe weave, laminette strip on satin, laminette check for suitings, and color and weave design with overcheck.

DuPont collection of 100,000 foreign fabrics. Anon. *Am. Dyestuff Reptr. 39,* 338 (May 15, 1950).

Note: A collection of over 100,000 foreign fabrics of natural and synthetic fibers is being made available by the DuPont Company to the textile trade for their use. Gathered over a period of nearly 25 years by the Fabric Development Section of the Rayon Division, this group is believed to be the largest assembly of fabric samples in this country. Cataloging has just been completed, with 8 broad divisions and 59 subdivisions. The 8 basic groups are plain weaves, twills, satins, dobby weaves, metallics, jacquards, knits, and laces. The samples are mounted on cards for easy reference. Each sample is identified as to basic group and subdivision. It is expected that this collection will be extensively used as inspiration for new fabrics—weaves, colors, and print designs.

Electric warp stop motion for loom. John C. Manoog & Victor F. Sepavich (to Compton & Knowles Loom Works). Can. P. 452 144, Oct. 26, 1948.

An electric warp stop motion for a loom.

Electric warp stop motion for loom. John C. Manoog & Victor F. Sepavich (to Crompton & Knowles Loom Works). Can. P. 452 145, Oct. 26, 1948.

An electric warp stop motion for a loom.

Filling thread cutter operating mechanism. Benjamin W. Brouwer (to Crompton & Knowles Loom Works). USP 2 507 955, May 16, 1950.

In control mechanism for a thread cutter on the lay of a weft replenishing loom having a reserve bobbin magazine, a member on the magazine which moves from the normal position thereof to transfer position before the lay reaches front center on a replenishing beat of the loom, an operator for the cutter movably mounted on the magazine and normally out of register with the thread cutter, and operative connections between the member and operator effective to move the latter into register with the thread cutter when the member moves from the normal position thereof to the transfer position thereof.

Harness cord connector for looms. Wm. A. Blanchard (to Crompton & Knowles Loom Works). USP 2 506 564, May 9, 1950.

In a harness cord connector for a loom having a harness actuator rod, a body member, a plug member extending transversely thereof, the members each formed with an open slot to receive the rod, the slots extending transversely of each other, and means on the body member to prevent relative transverse motion of the members and secure the body and members to the rod.

Hattersley and Northrop dobbies. W. Middlebrook. *Textile Mfr. 905,* 214-16 (May 1950).

Describes in detail the operation of the Hattersley and Northrop dobbies.

Hydraulic loom check. Roy O. Balogh (to The Weatherhead Co.). USP 2 506 697, May 9, 1950.

A hydraulic check device for the picker staff of a loom comprising a fluid reservoir, a pair of cylinders each having one end closed and the other end opening to the reservoir, a piston in each cylinder, means to by-pass fluid from each cylinder to the reservoir, means to close off the associated by-pass means as a piston moves a substantial distance into a given cylinder, means for operatively connecting the pistons to the picker staff so that as one piston enters its cylinder the other is withdrawn from its cylinder, fluid metering means operative to check motion of the piston in one direction after the associated by-pass has closed, the fluid metering means comprising a fluid passageway leading from one cylinder to the reservoir formed in one of associated piston and cylinder means, and means carried by the other of the associated piston and cylinder means for progressively closing off the passageway in proportion to the position of the piston in the cylinder as the piston continues to enter the cylinder and spring means associated with the check device

urging the piston in the other direction, past the midpoint of the stroke.

Letoff for looms. Carl P. Bergstrom (to Crompton & Knowles Loom Works). USP 2 508 810, May 23, 1950.

In letoff mechanism for a loom having a warp beam turning forwardly to deliver warp, weighted means tending to turn backwardly, worm and worm wheel connections between the beam and weighted means, driving mechanism for the worm including a clutch having a driven member turning with the worm and a loom operated driving member to turn the driven member, normally stationary manual means normally in non-working position but movable to a working position into operative relation with respect to the worm, and means operated by the manual means when the latter move to the working position thereof to separate the clutch members.

Longitudinal crepe multicolor design. J. Wendlik. *Melliand Textilber. 30,* 568-69 (Dec. 1949).

The design and construction of a longitudinal crepe multicolor design are discussed.

Loom motions for opening the reed. I. Laird. *Textile Mfr. 905,* 231-33 (May 1950).

The proper fitting of reeds in looms is essential to protect both reeds and shuttles from damage. This discussion of reed fittings covers loose-reed motions, fast-reed motions, bang-off mechanism on fast-reed looms, and oscillating reed cases.

Loom operation. Peter Von Kober. *Melliand Textilber. 30,* 392-95 (Sept. 1949) ; *in German.*

Trouble-free operation of a loom depends to a great extent on proper shedding and picking, for which purpose the movement of the lay, the harness and the shuttle must be adjusted in relation to one another in such a way as to make for the most favorable working conditions. The author discusses with the aid of a time-path graph the way in which the working of the loom depends on the movement of the lay, shedding and picking, and considers the best procedure to be followed in the weaving process and the course of the various operations in point of time.

Methods of weft insertion. D. C. Snowden. *Fibres 11,* 167-71 (May 1950).

Several methods of inserting picks during weaving are described. Discussed first is the conventional method employing picker-stick and auxiliary equipment. Then in turn the use of compressed air, rapier looms, and the carrier methods of pick insertion are described.

Picker. Saml. W. LaRocque (to LaRocque Mfg. Co., Inc.). Can. P. 460 610, Oct. 25, 1949.

A single piece interchangeable picker constructed of magnesium comprising a sleeve portion having a hard metal lining slidable on a picker rod, an integral flat thin body portion projecting horizontally forwardly from the sleeve portion having a picker stick bearing portion projecting vertically a substantial distance above and below the body portion from the inner edge thereof having a vertically convexed picker stick abutting surface and a picker head portion on the front end of the body portion having an inwardly facing socket for receiving a replaceable resilient picker head.

Pickers. J. Von Wegehenkel. *Melliand Textilber. 30,* 396-97 (Sept. 1949) ; *in German.*

The working life of the picker of an automatic bobbin-changing loom depends not only on the material; the condition and quality of the parts that come directly into contact with the picker, i.e., picking stick and shuttle, as well as adjustment of the picking mechanism exert a great influence on it. Durability is improved when the picker can be given an after-treatment for a few months consisting in first drying it, impregnating it and then drying it once more. Sperm oil is recommended as impregnating agent, or an equivalent synthetic product which must under all circumstances be free of acid. Metal pickers have been invented, and have hitherto broken down owing to their rigidity, which leads to additional wear on the leather and the beating parts. The interposition of springs proved to be unsuccessful, because they soon broke. In spite of all difficulties and the lack of success that has hitherto attended all efforts, a solution of the problem is desirable which will replace the rawhide picker by a better one; but there must be a guarantee that it can be substituted for the rawhide picker and that the price is moderate.

Production of full width effects without repeats. Anon. *Brit. Rayon & Silk J. 26,* 50-1 (Apr. 1950).

Describes briefly a machine which is designed to allow each end of a warp to act separately from every other end, thereby removing all restrictions as to the width of the design. The prototype machine is built to control 5,000 ends. Ordinary jacquard cards are used in parallel. The selector is stationary, and each harness card is a single unit. Speed is comparable with the jacquard. Few details and no illustration of the machine are given.

Shuttle feeler mechanism. John C. Todd. USP

2 508 807, May 23, 1950.

In a loom having an automatic filling replenishing mechanism including a shuttle feeler mechanism, the improvement which comprises a laterally movable shuttle feeler tip incorporated in the shuttle feeler mechanism, and a lever member fulcrumed on the loom and actuated by the filling replenishing mechanism upon transfer for shifting the shuttle feeler tip laterally in a direction to shift an improperly boxed shuttle into proper position for transfer.

Thread control for loom thread cutters. Richard G. Turner (to Crompton & Knowles Loom Works). USP 2 509 378, May 30, 1950).

In a control for a thread extending from a thread holder to the selvedge adjacent thereto in a weft replenishing loom having a positioner for the thread, mechanism between the holder and selvedge including a primary thread hook on the side of the mechanism adjacent to the holder and a clamp plate spaced from the hook on the side of the mechanism adjacent to the selvedge, a secondary thread hook on the clamp plate, and a cutter on the mechanism between the hooks, the positioner effective to cast the thread over the hooks and the cutter effective thereafter to cut the thread between the hooks.

Whip roll mounting structure. Frederik Stephensen & Elvin A. Mastriani (to The M. W. Kellogg Co.). USP 2 507 828, May 16, 1950.

A whip roll mounting comprising a pair of supports for the ends of the whip roll, each of the supports comprising a split bracket adapted to be secured to a frame structure, a split clamp having a swivel support in the bracket, the bracket having a screw for drawing the split sections of the bracket towards each other and around the clamp, to permit angular adjustment of the clamp, a longitudinal member in the clamp, the clamp having a screw for drawing the split sections of the bracket towards each other and around the member, to permit endwise adjustment of the member in the clamp, and a bearing having a connection with one end of the member and adapted to receive a corresponding whip roll journal.

Knitting C 3

British manufacturer examines future yarn developments. A. W. Eley. *Papers Am. Assn. Textile Tech 5*, 111-19 (June 1950); **Hosiery yarns of the future.** A. W. Eley. *Brit. Rayon & Silk J. 26*, 70 (Apr. 1950).

In a lecture, the properties of the ideal yarn for warp knitting and hosiery manufacturing are discussed.

Course marker for tricot and the like flat-bed knitting machines. Carroll R. Anderson (to Munsingwear, Inc.). USP 2 508 348, May 23, 1950.

A course marker for flat bed knitting machines having yarn supply, a knitting mechanism and a tension roll for moving the flat knitted fabric in relatively flat condition away from the knitting mechanism, the improvement comprising a pair of course marking mechanisms situated at opposite edges of the fabric susbtantially at positions corresponding to a knitted course across the fabric, each course marking mechanism including means for applying marks on the edges of the fabric when the mechanisms are actuated, and means for periodically and simultaneously actuating the course marking mechanisms for simultaneously applying marks at opposite edges of the fabric along a corresponding course of knitted stitches across the fabric.

Fashioned fabric, hosiery, and method of production. Sterling C. Mack (to Julius Kayser & Co.). USP 2 507 530, May 16, 1950.

A knit fabric having loops forming wales and courses forming plain knit portions having between them a narrowed course containing at least 3 adjacent groups of overlapped loops adjacent to each of opposite selvedges of the fabric, each group comprising loops from different wales, the loops of such narrowed course having center to center spacings similar to the center spacings of loops forming a course of a plain portion aforesaid, one of the plain portions aforesaid having a course interlooped with the narrowed course and comprising loops holding together the loops of the several groups so as to substantially narrow the fabric.

Fashioned fabric, hosiery, and method of production. Sterling C. Mack & Donald C. Mack (to Julius Kayser & Co.). USP 2 507 531, May 16, 1950.

A knit fabric stocking blank having loops forming wales and courses and having reinforced heel and sole sections divided from one another by a row of narrowing marks extending coursewise from substantially the selvedges to substantially the inner edges of the reinforced areas, each narrowing mark being composed of overlapped loops of adjacent wales aforesaid.

Knitted product and method of forming. Carl F. Schuessler (to Schuessler Knitting Mills, Inc.). USP 2 506 745, May 9, 1950.

A tubular knitted glove having a finger thereof closed by means of a plurality of circles of stitch loops drawn from a single row, the loops being engaged by the terminal thread of the finger, the circles of loops being concentric.

Knitting. Sterling C. Mack & Donald C. Mack (to Julius Kayser & Co.). USP 2 507 532, May 16, 1950.

A knit fabric having loops forming wales and courses and including a course containing a multiplicity (and at least several) adjacent groups of overlapped loops, each group including loops of 3 adjacent wales, and a course interlooped with the last named course and comprising loops holding together the loops of several groups so as to substantially narrow the fabric.

Knitting effect designs. Von Wilhelm Busch. *Melliand Textilber. 30,* 398-99 (Sept. 1949); *in German.*

This article opens by reference to the so-called drawing-needle effect designs at present frequently met with in knitted blouses for women and young girls, as well as similar knitted fabrics. When a flat knitting frame with hinged cam parts is employed for the production of these effects with designs showing wide gaps, these cam parts are apt to jump into the gaps during knitting and then damage the needle feet; this trouble can be remedied by using worn out needles cut in half, so that a short needle selector together with the foot is all that is left. It is then inserted into the grooves in place of the drawn off needles, placing it in working position with the other needles. By that means the cam parts are uniformly held up and cannot do any more damage. Four sketches are given explaining the application of the device.

Knitting machine. Albert L. Oberholtzer (to Scott & Williams, Inc.). USP 2 506 968, May 9, 1950.

A knitting machine comprising a needle cylinder, needles carried thereby, means for presenting wrap yarns to the needles, means for individually tensioning the wrap yarns, and means for relieving the tension of the wrap yarns fed to at least some needles on which stitches of a pocket are produced during the knitting of a stocking to prevent interference by the yarns with the location of such pocket inwardly towards the axis of the needle cylinder, the last mentioned means

being ineffective to relieve the tension on wrap yarns fed to other needles in the needle circle.

Knitting machine. Chas. F. Miller (to Jacquard Knitting Machine Co., Inc.). USP 2 508 834, May 23, 1950.

A forecut to provide a stationary edge to receive yarn in a knitting machine, characterized by the fact that the forecut is provided with a projection to make a fixed, stationary, holding engagement with the knitting machine at each end of the portion of the forecut which provides the yarn-engaging edge, and at least one of the projections projects laterally with respect to the portion of the forecut.

Knitting machine. Jas. L. Buchanan. USP 2 509 032, May 23, 1950.

In a full-fashioned knitting machine having a reciprocating yarn carrier and sinkers, means controlling the yarn carrier to move it above the level of the tops of the sinkers throughout the major portion of its strokes and to depress it below the level of the tops of the sinkers at the ends of its strokes to position it for selvedge formation.

Knitting machine. Roy C. Amidon (to Vanity Fair Mills, Inc.). Can. P. 460 328, Oct. 11, 1949.

In a flat knitting machine, 2 knock-over sinkers spaced apart and each including a blade and a nib, a stationary needle guide located below the sinkers and having a tongue, the end of which is held in the space between the sinkers, a needle having a hook disposed to cooperate with the tongue for effecting closure of the needle, means for reciprocating the needle to pass its hook end into and out of the space between the sinkers, at least one thread guide for placing a thread on the needle, means to actuate the thread guide, and means to move the sinkers in the general longitudinal direction of the axis of the needle and back and forth in a direction generally normal to the axis.

Knitting machine and method. Roy C. Amidon (to Vanity Fair Mills, Inc.). USP 2 508 209, May 16, 1950.

In a knitting machine employing thread guides and means for racking the same; a rock shaft; a needle bar carried by the rock shaft; a tongue bar carried by the rock shaft; a sinker bar carried by the rock shaft; hook needles on the needle bar; hook-closing tongues operatively connected to the tongue bar; sinkers on the sinker bar; means for imparting movements to the needle bar to effect reciprocation of the needles in their

lengthwise direction; means for imparting movements to the sinker bar to move the sinkers forwardly and backwardly; means for actuating the tongue bar to cause the tongues to close and open the needle hooks; means for rocking the rock shaft to impart an arcuate movement to the needles, tongues and sinkers; the aforesaid movement-imparting means being cooperatively connected together to cause the needles, the tongues and the sinkers to perform, with the thread guides, knitting operations.

Manufacture of knitted goods. Albert E. Collidge, Edwin C. Dawes & Thos. A. Gilbert (to The Klinger Mfg. Co.). Can. P. 452 050, Oct. 19, 1948.

A process for plasticizing knitted goods of tubular form made from thermoplastic yarns which process consists in passing the goods onto formers each of which provides a continuous surface possessing black-body characteristics to underlie the article to be plasticized on the formers and subjecting the goods on their black-bodied formers to externally applied radiant heat, so as to plasticize the goods.

Method of and means for changing the width of a knitted fabric during the knitting operation. John H. Straussberger (to Julius Kayser & Co.). USP 2 507 533, May 16, 1950.

The method of changing the width of knitted fabric between 2 successive knitting operations while needle loops of a single course are carried by a series of needles, one loop on each needle, which comprises delivering loops laterally from one needle to another, and then delivering certain of the delivered loops a plurality of times to other needles each carrying no more than one loop.

Method of and means for changing the width of a knitted fabric during the knitting operation. John H. Straussberger (to Julius Kayser & Co.). USP 2 507 534, May 16, 1950.

The method of narrowing knitted fabric in a single course during knitting while the fabric loops of the course are held on the knitting needles, which comprises simultaneously delivering all the loops outwardly of a selected needle to the same extent inwardly onto other needles whereby each needle receiving such loops inwardly of the needles from which loops were removed has 2 loops thereon, then delivering inwardly equally to other needles all but a predetermined number of the loops next outwardly of the number which have 2 loops thereon by reason of the previous delivery and repeating this latter operation until each of a plurality of loop-carrying needles outwardly of the selected needle carries 2 loops.

Method of and apparatus for handling tubular knitted fabrics. Jules G. Walter & Saml. Cohn (to Samcoe Holding Corp.). Can. P. 461 147, Nov. 15, 1949.

The method of modifying flattened tubular knitted fabrics to avoid the helical pattern thereof which comprises, advancing the flattened fabric continuously, slitting the fabric at one side to provide separated edges, causing one layer of the fabric to follow an elongated path with reference to the path of the opposing layer to bring the design on the separated edges into register, and sewing the separated edges so that the fabric is restored to tubular form.

Pattern knitting machine, particularly flat pattern knitting machine and method of manufacturing patterned knit goods on such machines. Eberbach & Kohler. Reutlinger Strickmaschinenfabrik. Ger. P. 743 769, Jan. 3, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1198 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Picot bar actuating mechinasm. Emil J. Berger & Howard K. West (to Dexdale Hosiery Mills). USP 2 507 487, May 16, 1950.

In a straight knitting machine having a series of needles, a narrowing frame, a picot bar with supporting arms secured to a horizontal fulcrum shaft rotatively borne by the narrowing frame, and means for releasably maintaining the picot bar in an inverted raised retracted upright position; picot bar control mechanism including means automatically operative to trip the picot bar for gravity fall, spring means for momentarily intercepting the picot bar in a downward angular inoperative position beyond the needles and means automatically operative in opposition to the spring means to thereupon swing the picot bar from the angular position to operative position in relation to the needles.

Proper vision aids speed looper training. Roberts K. Karn. *Textile World 100,* 109, 298, 300, 303 (May 1950).

Looper training has been very poor. It has been observing or judging rather than teaching. Job analysis, vision aids, and understanding of visual abilities have helped. At first, operator loops by use of vision, later, the sense of touch helps considerably. The ability to focus the eyes on near

objects decreases with age. Therefore special glasses, or magnifying glasses, mounted on the machine aid the operator by reducing the amount of focusing necessary. These are described. Light too, must be proper, and is often too intense. A color filter frequently helps.

60-gage machines produce more slowly, but better. H. B. LeFeaux. *Textile World 100*, 74, 296, 298 (May 1950).

60-gage hosiery manufacture is more costly than 51-gage. The 60-gage machines knit more courses per stocking. Fifteen denier yarn is used. Stockings produced are more snag resistant, fit better, are more sheer, and wale lines are much less pronounced.

Stitch cam for circular knitting machines. Frank R. Page (to Scott & Williams, Inc.). Can. P. 460 310, Oct. 11, 1949.

In a circular knitting machine having independent latch needles, a stitch cam having a needle-draw-down surface comprising spaced straight portions connected by an intermediate curved portion, the curved portion being so shaped and located as to provide a lowering of the needles beginning substantially with the closing of the latches which is slower than the lowering of the needles on the straight portions.

Straight bar knitting machine. John E. Lynam & Patrick G. McCarthy (to Wm. Cotton Ltd.). Can. P. 452 021, Oct. 19, 1948.

For a Cotton's Patent or other straight bar knitting machine, mechanism for converting a given linear displacement in one direction into a variable linear displacement in another direction, comprising a converter consisting of track members conjointly defining a track having 2 offset end parts and an oblique or inclined middle part joining them, which track members are relatively adjustable to vary the offset between the 2 end parts, and a follower for engaging the track, whereby relative movement between the follower and converter causing the follower to pass from one end part to the other produces a relative displacement in a transverse direction the amplitude of which is determined by the adjustment.

Warp knitting machine and method of operation. Wm. D. Kellogg, Richard F. Eshleman & Walter T. Morris (to Am. Viscose Corp.). USP 2 506 645, May 9, 1950.

In combination with a warp knitting machine having knitting needles, a cam shaft for controlling the cycle of operation, an electric motor

for driving the cam shaft, means for stopping the machine comprising an auxiliary control circuit having an electro-magnetic means for holding closed the circuit to the motor, the control circuit having 2 branches in parallel, one of the branches comprising a device operated in timed relation to the knitting cycle for intermittently interrupting the current therethrough and the other branch comprising a switch adapted to be opened to preset the stopping means in condition for initiation when the next interruption in the current is effected by the device in the first branch.

Warp knitting technology. II. D. F. Paling. *Brit. Rayon & Silk J. 26*, 52-4, 99 (Apr. 1950).

Movements of the main knitting parts are explained and shown by diagrams. Needle bar motion, sinker bar motion, presser motion, guide bar shogging motion, and guide bar swinging motion are all explained in some detail. Adjustments that can be made, and the effect of these adjustments are discussed. Illustrated with diagrams. (For Part I see TTD: *7*, 470.)

Whitin Model C-2 tricot knitting machine. Anon. *Whitin Review 16*, 1-6 (Mar.-Apr. 1949).

This is a discussion of features of the C-2 tricot knitting machine. Those noted are: gage and course speed, butted needle bars, hardened pattern wheels, cam construction, needle-stop control, improved inching device, automatic lubrication, and fabric design range.

Wirth Model F50 knitting machine. Hermann Mundel. *Melliand Textilber. 31*, 250 (Apr. 1950); *in German.*

This article discusses a new type of knitting machine, built by the firm of Wirth, the performance of which is fully the equal of that of similar machines of foreign construction.

Special fabrics C 4

Axminster pile fabric. Henry A. Reinhardt & Chas. R. Johnson (to Bigelow-Sanford Carpet Co., Inc.). USP 2 509 352, May 30, 1950.

An Axminster pile fabric having an Axminster backing and a cut pile face, the backing comprising stuffer warps, ground warps and double wefts, and the pile face having at least a portion thereof formed of cut pile comprising upright tuft legs of hard twisted wool yarn having a hard twist permanently set with kinks, the legs being at randomly angularly disposed relation to one another, having occasional non-uniform bends therein and presenting an uneven pile surface

consisting of irregularly disposed tuft leg ends, which presents an irregular pebbly appearance.

Carpets and rugs—history and manufacturing methods. H. B. Morris. *Can. Textile J. 67*, 57-8 (May 26, 1950).

The history of carpets is reviewed briefly and particulars are given of the various processes used by Harding Carpets Ltd. in the manufacture of many classes of carpets and rugs used in Canada.

Composite fabric. Walter G. Gorham & John Graham (to Dunlop Tire & Rubber Goods Co. Ltd.). Can. P. 452 031, Oct. 19, 1948.

A method of producing composite sheet material which comprises coating 2 lengths of textile fabric with an adhesive, positioning the 2 lengths of fabric in superimposed relationship with their coated surfaces facing each other and with a plurality of steel filaments arranged in side-by-side relationship to form a weftless fabric between the lengths of textile fabric, and consolidating the fabric and the filaments by pressure.

Composite material. John Graham & Henry A. Hirst (to Dunlop Tire & Rubber Goods Co. Ltd.). Can. P. 452 030, Oct. 19, 1948.

The production of composite materials of wire and textile fabric which comprises contacting a layer of wires in parallel relationship with a textile fabric containing fusible threads and less-fusible threads and subjecting the assembly of wires and textile fabric to pressure at a temperature sufficient to fuse the fusible threads but insufficient to affect substantially the physical properties of the less-fusible threads.

Control for Axminster loom tube frame conveyor system. Raymond F. Dion (to Crompton & Knowles Loom Works). Can. P. 460 716, Nov. 1, 1949.

In an Axminster loom provided with a tube frame conveyor system having 2 tight sections movable independently of each other and joined by 2 slack sections and wherein both tight sections are required to move substantially the same distance during an extended period of weaving, means operated by the loom moving one of the tight sections the distance during the period of weaving, an electric motor operatively connected to the other tight section and having periods of running alternating with periods of stoppage, and electric means controlled by the other tight section causing the motor during the periods of running thereof to move the other tight section the

distance during the period of weaving.

Embroidery machine. Emil Verse. *Melliand Textilber. 31*, 251-54 (Apr. 1950); *in German.*

Describes the development of the embroidery machine from its beginnings as a hand embroidery machine up to its present day perfection as a shuttle machine. It is shown how the principle of embroidery with threads of a definite length, as carried out on the first hand-operated embroidery machine, was precisely identical with the old method—still in vogue—of embroidering by hand with a needle. Then follows a description of the development of the shuttle embroidery machine from the hand embroidery machine, its accessories and their method of operation, culminating in the modern shuttle embroidery machine of the latest type, 15 yards in length with automatic embroidery motion, which latter is briefly explained, as well as the preparation of a pattern card. The article concludes with a few remarks on the extent of the embroidery industry in Voigtland in Germany.

Loom for weaving pile fabrics. John F. Lockley (½ to Woodward Grosvenor & Co. Ltd.). USP 2 509 776, May 30, 1950.

In a loom the provision of longitudinally extending pile wires mounted for angular movement so that their rear ends are displaceable in a direction laterally of the loom, and means disposed at the front ends of the wires for effecting the angular movement of the pile wire ends in coordination with the means for raising and lowering the pile warp, so that the pile threads are raised on one side of their respective pile wires and in their raised position the pile threads and their respective wires, thereby effecting the requisite loop-loom whereby when the pile threads are again lowered they are on the opposite side of their respective wires, tehreby effecting the requisite looping of the pile threads around their respective wires to form the pile loops.

Machine for making fabric cylinders. Walter Bishop (to Fraser Products Co.). USP 2 506 916, May 9, 1950.

Bias binding tape can be most economically made by effecting a spiral or helical cut in a cylinder of fabric whose warp threads are longitudinally disposed with respect to the cylinder. According to present methods the cylinder of fabric is produced by sewing together the longitudinal, substantially parallel edges of a sheet of fabric with a belt stitch. However, after the strip of bias tape has been cut from the cylinder and is being

used, it has been found that the tape is weak and unsightly at those points where the stitching appears. This invention provides a machine by means of which the longitudinal, substantially parallel edges of a sheet of coated fabric may be joined together in a stronger and more attractive manner than by stitching. The longitudinal, substantially parallel edges of a sheet or strip of coated fabric are joined together with a strip of tape to form a cylinder of the fabric. The cylinder is then flattened and the air within the cylinder is expelled to insure its remaining flat, after which a substance similar to the coating on the fabric is applied to the joint and caused to harden. After the substance upon the joint has reached a desired state of firmness, it is exposed to suitable embossing means which gives the covered joint the same appearance as the rest of the coated fabric and thereby entirely hides the joint.

Manufacture of felted material. Cyril P. deM. Porritt (to R. R. Whitehead & Bros. Ltd.). USP 2 508 968, May 23, 1950.

A method of hardening fibrous material consisting in constraining a number of laps of fiber between a pair of elements in parallel planes and alternately displacing each element in its own plane in opposite directions at times only when the other element is stationary.

Method of producing nylon and cellulosic yarn patterned fabric. Harold I. Huey & Wm. W. Russell (to Sayles Finishing Plants, Inc.). USP 2 509 146, May 23, 1950.

The method of producing a patterned fabric, which comprises interweaving nylon ground yarns and cellulosic pattern yarns to form a fabric, treating selected areas of the fabric with at least one member of the group consisting of aluminum chloride, aluminum sulfate, zinc chloride and magnesium chloride, heating the fabric for a sufficient period of time at a temperature between 250°F-320°F to substantially disintegrate the treated lengths of pattern yarns and removing the disintegrated lengths of pattern yarns to provide pattern areas intermediate relatively open background areas in accordance with the predetermined pattern.

New gripper loom offers many advantages. Anon. *Textile Mfr. 905*, 235 (May 1950).

Describes a new carpet loom produced by Boucher and Co. Ltd. Of the looms features, probably the most outstanding is the modified jacquard which enables colors to be selected down. The grippers

take off at the lowest point of the yarn carriers, which means that a greater percentage of ends are constantly under the weaver's observation. Other features of the new loom include: a card cylinder constructed of solid cast aluminum; a reduction in height of 3 ft.; a patented inverted saw-tooth knife mechanism incorporating a number of blades which completes the severance of ends in a fifth of the time normally taken; a beam diameter of 24 in.; and a patented let-off.

Pile fabric. Eugene F. Clark (to Marshall Field & Co.). Can. P. 460 290, Oct. 11, 1949.

A fabric composed of groups of warps, each group composed of a plurality of warps spaced from the adjacent group on each side, a filler composed of a plurality of strands of yarn in side-to-side relation with each other, alternate warps being positioned on opposite sides of both strands of filler, the warps being interlocked at the point where they cross each other and pile tufts between each group of warps and around both strands of filler and in frictional engagement with each other at their sides and in abutting engagement with each other at their front and rear.

Pile fabric with permanently set hard twist wool yarn. Robt. J. Jackson (to Bigelow-Sanford Carpet Co., Inc.). USP 2 509 350, May 30, 1950.

A pile floor covering having a pile face at least a portion which is formed of cut pile comprising upright tuft legs of hard twisted wool yarn having a hard twist permanently set with kinks the legs being at randomly angularly disposed relation to one another, having occasional non-uniform bends therein and presenting an uneven pile surface consisting of irregularly disposed tuft leg ends, and having an irregular pebbly appearance.

Process for making pile fabric with permanently set hard twist wool pile yarn. Robt. J. Jackson (Bigelow—Sanford Carpet Co., Inc.). USP 2 509 349, May 30, 1950.

The process of producing a pile fabric containing cut highly twisted wool yarns woven as the pile therein, which comprises highly twisting wool yarn, reeling the twisted yarn to form skeins, relieving the skeins from tension to form kinks at intervals in the yarn, wetting the yarn, setting the twist in the yarn by subjecting the skeins of wet yarn while in a relaxed tensionless condition to a temperature of saturated steam at a pressure of at least 5 lbs. and not over 40 lbs. per sq. in., drying the skeins of yarn, winding

the yarns on spools under tension thereby straightening the kinks, weaving the yarn under tension thus free of kinks as the pile warps over the wires of a wire loom to form pile tufts, and cutting the pile by withdrawing the wires, whereby the tuft legs have a permanent twist and assume random angular upright positions to present a face consisting of irregularly disposed pile ends.

Process of producing Axminster pile fabric. Henry A. Reinhardt & Chas. R. Johnson (to Bigelow-Sanford Carpet Co., Inc.). USP 2 509 351, May 30, 1950.

The process for the production of an Axminster pile fabric having pile of wool yarns hard twisted to such a degree that they have a tendency to kink, which comprises treating a kinky hard twisted wool yarn having the kinks set therein, to temporarily remove the kinks and inhibit the tendency of the yarn to kink when relieved of tension, by wetting the yarn and then drying the yarn under sufficient tension to straighten out the kinks, winding the kink-free yarn on spools of an Axminster loom and weaving the yarn on the loom as the pile of an Axminster pile fabric, and then wetting and drying the legs of the pile of the resulting Axminster pile fabric, whereby the tendency of the pile yarn to kink is restored, and the legs of the pile are softened and swollen while retaining their twist.

Process for the manufacture of sheet materials of the suedette type. John Graham & Henry A. Hirst (to Dunlop Tire & Rubber Goods Co. Ltd.). Can P. 452 032, Oct. 19, 1948.

A process for the production of sheet material of the suedette type which comprises coating a woven textile with a mixture of a finely divided vinyl polymer and a plasticizer therefor which is substantially a non-solvent for the polymer at atmospheric temperature, but which gels the polymer on heating, distributing textile fibers over the coating and then heating the materials to cause the coating to gel and anchor the fibers therein.

Rug and method of making same. Benjamin A. Greenberg (to Charm Tred Mills, Inc.). Can. P. 460 251, Oct. 11, 1949.

A pompon-forming fringe comprising a fringe body consisting of yarn woven back and forth transversely of the body to form spaced groups of yarn loops with portions of the yarn diverted from opposite sides of each group to form narrow connecting yarn links joining the loop groups

along the longitudinal center line of the fringe, central longitudinal stitching crossing the loop groups and the strands of the narrow yarn links to hold the loop groups and the links in position, inner selvedges removably secured only across the yarn loops of the loop groups on opposite sides of the links and spaced therefrom to temporarily hold the yarn loops in place, and outer selvedges also removably secured only across the yarn loops of the loop groups on opposite sides of the links and spaced therefrom to the outside of the inner selvedges to temporarily hold the loop groups connected in spaced relationship.

Tufted, hooked, and woven fabric. Jos. Blumfield. USP 2 508 852, May 23, 1950.

In a fabric suitable for rugs, drapes, etc. which presents a scintillating effect, the fabric comprising a sheet of woven material to form a strong base, a plurality of yarn twists extending through the base and which are looped on one side of the base to form a pile, each yarn twist having spiral grooves, and having a strand of scintillating material in the grooves as a unitary part of the twist and which runs parallel therewith so as to provide numerous reflecting surfaces along each loop.

Woven fabric. Donald Finlayson & Harry Crawshaw (to Camille Dreyfus). Can P. 452 211, Oct. 26, 1948.

A belting fabric of woven construction and having a warp comprising braids each consisting of a tubular sheath and a core of parallel textile yarns enclosed therein, the major proportion of the weight of the sheath consisting of textile yarns running substantially parallel to the axis of the sheath and the minor proportion consisting of a plurality of textile binder yarns running helically in both directions round the sheath so as to cross one another at intervals, and crossing and interlacing with the yarns of the major proportion but not with the yarns of the core.

Fabric applications C 6

COTTON IN THE LUGGAGE INDUSTRY. Frank A. McCord & Raymond Steinbach, Jr. Memphis, Tenn., Natl. Cotton Council of America, 1950. 52 p. Free.

This report continues the series of studies which the Natl. Cotton Council is making for the purpose of providing more information about end use markets for textiles and for pointing up research and sales opportunities for expanding

cotton consumption in these markets. The luggage industry was selected as a field of study because of the raw cotton industry's lack of knowledge about a market in which there appeared to be opportunities for increasing cotton consumption. The authors have endeavored to collect factual data and to present an objective analysis of the information obtained. Conclusions and recommendations are based on survey findings, and not on personal opinions of the authors.—*Foreword.*

Fabrics for type S-2A life raft. W. O. Perry. U. S. Air Material Command. Engineering Div. Materials Laboratory, Wright Field, Dayton, Ohio. PB 99 683, Nov. 1949. 10 p. tables. *Bibl. of Technical Reports 13*, 297 (June 16, 1950).

Tests were conducted to determine the physical properties of 10 samples of life raft materials and their conformance to the applicable procurement specification.

Method of preventing tarnishing of the surfaces of silverware. Jas. C. Moss (to Celanese Corp. of Am.). USP 2 506 731, May 9, 1950.

A method of preventing tarnishing of the surfaces of silverware, which comprises placing the silverware in a covering shaped to receive the silverware, the covering comprising a fabric of closely woven construction containing filamentary materials having a basis of a lower aliphatic acid ester of cellulose.

Process for manufacturing artificial chamois. Philip T. Tammen (to Am. Enka Corp.). USP 2 506 249, May 2, 1950.

A process for manufacturing artificial chamois which comprises coating an open mesh fabric with a viscose solution and gelatinizing the same by heating in the neighborhood of 50°C, incorporating in a similar viscose solution a surface tension reducing agent of the class consisting of soaps, sulfonated oils, sulfonated alcohols and saponin and a vapor generating substance of the class consisting of low boiling hydrocarbons and halogenated hydrocarbons that generates a vapor at least at the temperature at which the viscose is coagulated, applying the viscose mixture to both sides of the gelatinized viscose fabric sheet and heating the laminated sheet in the neighborhood of 50°C under atmospheric pressure whereby fine pores are formed in the outside layers of the sheet and finally regenerating the sheet in an acid bisulfate bath and desulfurizing.

Suits—protective, fire fighting. Eugene T. Hagan. U. S. Air Material Command. Engineering Div., Aero-Medical Laboratory, Wright Field, Dayton, Ohio. PB 100 200, Dec. 1949. 26 p. photos, tables. *Bibl. of Technocal Reports 13*, 261 (June 16, 1950). Microfilm $2.00, Photostat $2.50.

Results of tests of 6 types of fire fighting assemblies developed by the Clothing Branch, Aero Medical Laboratory. Each assembly consisted of mittens, spatted boots, hood, and coverall. The 6 types of outer protective layers were: 1) untreated cotton duck, 2) neoprene coated fiber glass, 3) fire and waterproof cotton duck, 4) aluminized fiber glass, 5) aluminized cotton duck, and 6) aluminum foil laminated to fiber glass. Photographs.

Textiles for the rubber industry. Wm. A. Karl. *Papers Am. Assn. Textile Technologists 5*, 131-36 (June 1950).

The applications of textiles in the rubber industry, principally in tires, are discussed. The use of various types of cotton and various types of fabric constructions in automobile tires is traced, and the properties of cotton and rayon are compared as to their ability to perform the required tasks as tire components. Performance and price are the determining factors in the selection of textile materials for use in the rubber industry.

STANDARD FINISHING D

Application of carboxymethylcellulose in desizing. G. Ulrici. *Teintex 14*, 463-77 (Nov. 1949); *in French.*

The chemistry of carboxymethylcellulose is discussed. Experiments were carried out to observe the desizing action of carboxymethylcellulose on wool and cotton under various conditions, together with estimations of extension and tensile strengths of the treated materials. Results indicated that such treatments would be of interest to the textile processor.

Behavior of cellulose fibers on drying. A. Schaeffer. *Textil-Praxis 5*, 3-6 (Jan. 1950); *in German.*

When treated at temperatures over 80°C, dry cellulosic fibers show damage on subsequent storing. Temperatures of 100-120°C do not cause damage to wet, neutral cotton; however, if alkali is present temperatures should not exceed 65°C. Damage also occurs to fibers after repeated treatment in water followed by drying. Calgon, Trilon A and B, Igepon, or Gardinol may be added to the

last rinse bath to decrease the tendency of the fiber to degrade on drying. Gardinol is recommended as being particularly effective if alkali is present.

Carboxymethylcellulose. R. Dicker. *Rayonne 6,* 73-7 (Feb. 1950); 77-80 (Mar. 1950); *in French.*

Part I is concerned with the use of carboxymethylcellulose as a detergent in the textile industry and a comparison of CMC with other detergents is made. Part II is concerned with the action of detergent G-1226 (polyesters of mixed fatty acids) and Igepon (long-chain sulfonated amide).

Comparative detergency of surface-active agents on woolen cloth. Kermit S. LaFleur. *Am. Dyestuff Reptr. 39,* 385-88 (June 12, 1950).

Describes Launder-Ometer tests of the comparative detergency of most of the distinct chemical types of surface-active products for woolen cloth soiled with the oil used in its manufacture. Comparisons were made on the basis of concentration and money-value, and included trials without a builder, with an alkaline builder (sodium carbonate), or with a neutral builder (sodium chloride). Neutral scouring with a polyoxyethylene thioether using sodium chloride as a builder was found to be very effective for removing the specific soil; the combination was superior to all others examined, both on a concentration and money-value basis. As the solubility of the polyoxyethylene thioether was considered inadequate for a standing solution a combination of this product with an alkyl aryl polyoxyethylene condensate was selected as best for effectiveness and stability. Limited mill experiments confirmed the laboratory findings. A 1 oz. per gal. solution of the selected detergent combination containing 5 oz. per gal. of sodium chloride very effectively removes mineral oil soil.

Continuous bleaching of cotton. A. Klein. *Teintex 14,* 5-21 (Jan. 1949); 75-83 (Feb. 1949); 95-103 (Mar. 1949); 143-49 (Apr. 1949); 193-205 (May 1949); 237-49 (June 1949); 289-99 (July 1949); 325-31 (Aug. 1949); 369-75 (Sept. 1949); *in French.*

The advantages of bleaching cotton goods by the continuous method are discussed, and the process is described in practical terms with reference to the types of machines employed. 131 references.

Cost factor in bleaching. Irving Teplitz. *Textile Bull. 75,* 69-71 (Aug. 1949).

The bleaching of cotton cloth is discussed with

respect to the efficiency of the various methods, the quality of product they produce, and the cost of the bleaching materials. Another factor which must be considered in determining the most economical process to use is the quality of material to be bleached.

Cotton fabrics: sonic laundering. H. K. Schilling, I. Rudnick, C. H. Allen, P. B. Mack & J. C. Sherrill. *J. Acoust. Soc. Am. 21,* 39 (1949). (through *J. Am. Oil Chemists' Soc. 27,* 199 (May 1950)).

Standard soiled cotton swatches were placed in a pan of soap and water above a high-frequency siren. The swatches were processed only 5 times; there was little visible agitation of the samples, and no strength loss. The result of this 60-minute treatment compares favorably with the removal of dirt accomplished by 3 commercial laundries, each processing the swatches 50 times and taking 3,000 minutes.

Damage to wool and wool fabrics in carbonization. H. Eichholz. *Textil-Praxis 4,* 187-89 (Apr. 1949); *in German.*

The sources of damage encountered in the carbonization of wool and wool fabrics are discussed under the following: pre-wetting, squeezing out effect, acid concentration, drying and burning, piece carbonization, action of light, and the sodium formate process.

Developments in the dyeing and finishing of woven wool fabrics. E. M. Padgett. *Bradford Textile Soc. J.* 83-9 (1948-49).

This discussion of dyeing and finishing covers setting, setting research, scouring, milling, dyeing, unions, fabric stabilization, mothproofing, color fastness, and dry finishing.

DEUTSCHER FARBER KALENDER, 1950. Ed. by O. Mecheels. Kühnhausen über Traunstein, Franz Eder. 356 p. DM7.

This is the first post-war appearance of this well-known yearbook for the dyer, bleacher and finisher. The book is intended to provide the man in industry with information about the latest developments, practical experience and research results. The following articles are included: "Textile Chemistry and Physiology," by O. Mecheels; "Development of modern textile finishing," by H. Rath; "Garment dyeing," by L. W. Müller; "Textile chemicals," (in table form, by G. Schwen); "Practical cases of textile damage," by H. Nopitsch; "Dyeing of nylon or perlon stockings," by K. Wojtaschek; "Purification of water supplies

and waste liquors," by P. Gfröreis; "Organization of dye-store and dye-kitchen in a printworks," by O. Schlemmer; "Heating and steam economy in dyeworks," by L. Braun. Tables are given as follows: "Qualitative analysis of wetting agents and detergents," by K. Linsenmeier; "Identification of classes of dyes on the fiber," "German artificial silks, spun rayons, and synthetic fibers," and "New dyes and other products."

Drying and curing apparatus. Chas. B. Albright (to Orr Felt & Blanket Co.). USP 2 506 760, May 9, 1950.

In a system for conditioning air for drying a fabric strip, a fan for circulating conditioned air, an air mixing chamber communicating with the inlet side of the fan, means for conducting air from the fan and for returning the air delivered thereby to the mixing chamber, independently operated damper means in the mixing chamber to allow for inlet of outside air thereto and exhaust of circulating air therefrom, other damper means in the mixing chamber to allow for re-circulation of air between the fan through the mixing chamber when open and to cut off the re-circulation of air when closed, heating means in the mixing chamber for heating air before delivery into the fan, means for individually controlling each of the aforesaid damper means, timing means rendered active by air movement caused by the fan for actuating the damper control means to set the damper means for intake of all outdoor air and exhaust of all air circulated by the fan, means rendered active upon running of time of the timer for rendering active the heating means and for controlling the damper control means to set the dampers for re-circulation of air, and thermal control means responsive to the temperature of the air delivered by the fan for controlling the heating means.

Fabric folding machine. Geo. Haeberlin (to Richmond Piece Dye Works, Inc.). Can. P. 460 626, Oct. 25, 1949.

A textile web folding machine for continuously folding a web of textile material in zig-zag folds comprising at least 2 horizontally disposed fabric web carrier rods, means defining an endless path of travel for the rods and having a fabric web release end defining an unobstructed path of travel for the rods and any therefrom depending fabric web in a to and fro direction substantially parallel to the rods, drive means operatively connected to the rods to move the same along the path, and means for continuously passing a web of textile material onto the path for rod engagement with the under side of the web.

Finishing machinery—Principles and development. K. S. Laurie. *J. Soc. Dyers Colourists 66*, 225-29 (Apr. 1950).

The principles underlying the design and development of textile finishing machinery are discussed. To properly describe the underlying principles the chemical, physical, and mechanical aspects of machine design are taken into account. Described in this paper are dyeing equipment, drying equipment, and the application of electronics to cloth guiding and moisture control.

Finishing of woolen and worsted fabrics. C. S. Whewell. *The Cobbler 2*, 27-32 (1949-50).

This is an account of some of the more important wet processes used in finishing wool fabrics, the emphasis being on those aspects of interest to dyers. Included in the discussion are: preliminary processes, scouring, dirty pieces, color bleeding, excessive shrinking, faults caused by allowing wet pieces to lie about, setting processes, milling, raising, chemical processes—methods of preventing felting, carbonizing, mothproofing, and dimensional stability.

Fulling or planking machine. Victor C. Bohm. Can. P. 460 526, Oct. 25, 1949.

A fulling and planking machine comprising a plurality of main rollers adapted for both rotary and vibratory movements, a group of secondary rollers greater than 2 and of smaller diameter than the main rollers mounted in substantially tangential relation to each of the main rollers at acute angular distances therearound, and independent driving means for the main rollers and for the groups of secondary rollers.

Latest carbonizing practice. Anon. *Dyer 53*, 210-11, 212 (Feb. 1950); **Carbonization treatment of woolen and worsted fabrics.** A Special Correspondent. *Textile Recorder 67*, 88 (May 1950).

See TTD: *7*, 381.

Low temperature wool piece goods scouring with Nacconol NR. O. M. Morgan & J. E. Walter. *Dyestuffs 40*, 67-74 (Apr. 1950).

See TTD: *6*, 562.

Modern textile auxiliaries. A. J. Hall. *Silk & Rayon 24*, 646, 650, 654 (May 1950).

This is a continuation of the listing of textile auxiliaries with brief descriptions of their chemical and physcal properties. See also TTD: *7*, 384 and 480.

Moisture control in fabric drying. David S. Bunch,

Jr. *Am. Dyestuff Reptr. 39,* P369-70 (May 29, 1950).

The use of the Fielden Drimeter, both with and without the Fielden C2 Automatic Control Unit, is discussed with respect to the cost of dryer operation and the quality of dried textile materials. The application of these instruments in slasher operation is also noted. The detrimental effect of overdrying on fabrics, fibers and finishes is considered. (See also "Fielden Drimeter," Col. 584 of this issue.)

Molecular maul and wedge. Anon. *Rohm & Haas Reptr. 8,* 7-9, 25 (Apr.-May 1950).

In non-technical language the action of enzymes, their nature, and application to textile finishing operations are described. The bacterial enzymes, which act at high speeds, have made possible the rapid desizing of fabrics and the continuous bleaching and dyeing operations now in use.

Olein and mineral oil; difficulties caused in finishing woolen goods. I-II. M. Kehren. *Melliand Textilber 30,* 537-39 (Nov. 1949) ; 593-97 (Dec. 1949) ; *in German.*

Part I of this article discusses the difficulties that may be caused in the dyeing and finishing of woolen goods and hair yarn for the manufacture of carpets by having used mineral oils or preparations containing such as lubricants. Part II tabulates the resuls of trials made to wash mineral oil out of woolen yarns on a laboratory washer by applying different washing assistants under varying conditions. Then follows a description of the general efficacy of washing assistants for laundering textiles containing mineral oil. The conclusions that emerge according to the present status of the lubricating problem for manufacturers of reclaimed spinning materials as well as for woolen yarn spinners are discussed in detail and the general re-introduction of olein as lubricant for textile goods that are milled and washed in alkaline liquors is proposed. In his concluding observations, in which the author points out the distribution of olein as lubricating oil in countres abroad and lays stress on the advantages of finely dispersed olein lubricants and especially of the emulsified oleins, he recommends suitable measures for the removal of the difficulties caused by the use of unsuitable lubricants containing mineral oil.

Softening of textiles. Emil A. Vitalis & John E. Lynn (to Am. Cyanamid Co.). Can. P. 460 399, Oct. 18, 1949.

A softening composition for textiles comprising a mixture of 90-94% by weight of the condensation product of 5-7 mols of ethylene oxide with a mixture of 50-70 mol % of an aliphatic-substituted guanidinium N-aliphatic carbamate and 50-30 mol % of an aliphatic amine N-aliphatic carbamate in which the aliphatic radicals contain 16-18 C atoms and 10-6% by weight of an anionic surface-active agent containing a single long aliphatic radical of 16-18 C atoms together with 0.1-4% of a water-soluble aluminum salt, based on the weight of the mixture.

Some aspects of recent research on finishing. J. B. Speakman. *Bradford Textile Soc. J.* 70-5 (1948-49).

Recent research developments in wool finishing are reviewed, and attention is given to those developments which require the cooperation of machinery manufacturers for their realization. Developments in scouring, tentering, milling, unshrinkable finishes, raising and resin finishes are noted and the properties of the wool fiber of importance in these processes considered.

Textile material bleaching process. Geo. P. Vincent, Archie L. Dubeau & John F. Synan (to The Mathieson Alkali Works). Can. P. 452 187, Oct. 26, 1948.

The process of bleaching and scouring cellulosic textile materials which comprises circulating an alkaline solution of a hypochlorite, an alkali metal chlorite and a detergent through the material at a temperature of substantially 85 to 95°F, raising the temperature of the solution to substantially 200°F and continuing the circulation of the solution through the material at such temperature.

Theoretical and practical aspects of drying. H. Netz. *Textil Praxis 5,* 11-15 (Jan. 1950) ; *in German.*

Different methods of drying textile materials are discussed mathematically with a view to providing equations for the effect of drying conditions on the final results.

Treatment of wool with sodium chlorite. Maurice Van Overbeke & Georges Mazingue. *Bull. de l'Institut Textile* No. 18, 11-24 (Apr. 1950) ; *in French.*

This paper is a report of a study, the purpose of which was to determine the possible applications of sodium chlorite in the treatment of wool. After examining the variations in deterioration of wool in relation to all factors influencing the action of sodium chlorite, the authors show that sodium chlorite cannot be used for bleaching wool. On the other hand, sodium chlorite can make wool

unshrinkable to a certain degree, under well defined operating conditions.

Tubular fabric spreader. Geo. A. Johnson (to Am. Viscose Corp.). USP 2 507 599, May 16, 1950.

A spreader adapted to float within a traveling tubular fabric comprising a framework, a group of rotatable elements spaced along each edge of the frame, and, operatively associated with each group of the elements, means comprising a rotor disposed with its periphery adjacent that of one of the elements and a belt engaged therebetween for driving the elements along one side independently of the other rotatable elements.

DYEING AND PRINTING E

Dyeing

Application of acid dyes to nylon. J. P. Niederhauser. *Teintex 14*, 407-29 (Oct. 1949); *in French.*

The theory of the behavior of acid dyes on nylon is considered. For practical purposes, acid dyes are divided into 3 groups: 1) those applied from strongly acid, 2) weakly acid, and 3) neutral baths. Recommendations are given for the selection of dyes for use in mixtures and for the production of solid shades and reserved effects on wool/nylon mixtures.

Application of naphthols. Bert R. Celentano. *Am. Dyestuff Reptr. 39*, P322-23 (May 15, 1950).

This is a discussion of the application of naphthols on cotton and rayon and the relationship of naphthol substantivity to methods of application and equipment. An explanation is given of how good penetration and good rubbing fastness in naphthol dyeing can be obtained by consideration of the factors of quality of water, quality of salt, and proper soaping subsequent to coupling. The use of naphthols for acetate and nylon is also considered.

Carpet and rug dyeing. B. Kramrisch. *The Cobbler 2*, 34-8 (1949-50).

The dyeing of carpets and rugs is discussed in some detail. Specific dyes are recommended for various types of dyeings. Directions are given for the preparation and tanning of sheepskin rugs prior to dyeing, and their dyeing.

Coloration of textile fabrics. Jack A. Radley (to Imperial Chemical Industries, Ltd.). USP 2 506 892, May 9, 1950.

In the coloring of cellulosic fabric by applying thereto an aqueous dispersion of an organic pigment and a bonding agent comprising a methacrylic ester polymer followed by drying of the treated fabric, the improvement which consists of adding to the aqueous dispersion ammonium polymethacrylate in quantity corresponding to between 0.025% to 0.075% by weight based on the total weight of the dispersion, whereby to improve the levelness of color on the resulting dyed fabric.

Coloring and painting [sic] method with sulfur dyes. Kohl. I. G. Farbenindustrie A. G. Ger. P. 743 566, Nov. 21, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6*, 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Continuous ranges proved for dyeing synthetics. Frederick A. Alter. *Textile World 100*, 105 (May 1950).

Continuous dyeing units for synthetic yarn fabrics are designed for rapid dye fixation and superior penetration at high temperatures. A unit consists of 2 pads, a steamer unit, an oxidizing unit, and a washer-rope soaper section, all syncronized. Complete instrumentation and hydraulic pressure loading of nips help in maintaining uniformity. Stainless steel is used. Illustrated with schematic diagram.

Dyeing nylon hosiery. Lawrence F. Ryan (to E. I. duPont de Nemours & Co.). USP 2 480 775, Aug. 30, 1949.

A process of dyeing nylon hosiery, composed in part of monofilament and in part of multifilament yarns of different denier, with water insoluble dispersed cellulose acetate dyes, which comprises treating the nylon in an aqueous bath containing from 5% to 10% of tannic acid based on the weight of the nylon, and thereafter applying to the nylon containing the tannic acid the water insoluble dispersed dyes by heating the nylon in the aqueous dispersion of the dye.

Dyeing of nylon with direct cotton dyestuffs. Clifford C. Wilcock (to Courtaulds Ltd.). Can. P. 460 436, Oct. 18, 1949.

A process for improving the dyeing affinity of nylon for direct cotton dyestuffs in an acid bath which comprises pre-treating the nylon with a dilute solution of a water-soluble salt of a metal chosen from the group consisting of copper, silver, lithium, barium, strontium, calcium, magnesium, zinc, aluminum, cerium, tin, lead, chromium, iron, nickel and cobalt.

Gentler stripper. Anon. *Chem. Industries 66,* 667 (May 1950).

Describes the "Harristrip" process for stripping wool, on which Alexander Smith & Cons Carpet Co. has recently been granted an exclusive license. The process involves "rebonding"—i.e., replacing the cystine linkage with one that is not affected by subsequent treatment. Rebonding is accomplished by reacting the waste wool with ethylene dibromide. The compound is added with sodium hydrosulfite or some other reducing agent to a bath buffered with borax that has been heated to 190°F. Temperature is maintained for 15 min., or longer, depending upon the stock and modification of process being used. If stronger action is required, further stripping with standard reducing agents may be employed. Harristrip wool has a low alkali solubility—13.5%, which on redyeing may go to 15%. Bureau of Standards wear tests have substantiated the low damage indicated for Harristrip by alkali solubility figures. Alexander Smith has the right to sublicense the process.

High speed vat dyeing. Anon. *Brit. Rayon & Silk J. 26,* 68-9 (Apr. 1950).

(Report of a talk by G. L. Boardman). A new method of high speed dyeing involving the use of molten metal, as the medium in which fixation of the color occurs, has been developed. The unit has 2 parts, dyeing machine and conventional soaping range. The dye machine contains metal with a melting point of 70°C. The dye liquor floats on top of the metal and as the cloth passes through the metal excess dye is squeezed out; maximum speed is 120 yds. per min. The operation of this machine is described in detail. Any quantity from 1 piece up can be satisfactorily handled.

Influence of tension on viscose yarn. G. Quintelier & L. Hermans. *Rayonne 6,* 47-50 (1950); *in French.*

In order to determine the effect of tension on the luster and dyeing properties of viscose yarn, systematic tests were used to see if a yarn not under tension has more luster than a yarn under tension and if a yarn dyed under tension is brighter than a yarn dyed when not under tension. The tests and results are described and conclusions drawn.

Measurement of dye strengths. E. I. Stearns. *Am. Dyestuff Reptr. 39,* P358-66 (May 29, 1950).

If shade variations are not present, dye strengths can be estimated visually to the nearest 5% by straight dyeings or, in some cases, to the nearest

1% by combination dyeings. From spectrophotometric reflection data strengths can be calculated by using the Pineo formula. In the presence of shade variations any strength estimate is approximate; in any case, exact dyeing conditions must be specified.

Method for dyeing animal fibers, occasionally mixed with vegetable fibers or regenerated cellulose, or leather. Rosenberg & Guido. I. G. Farbenindustrie A. G. Ger. P. 748 970, Nov. 14, 1944. PB L 70 146. *Bibl. Sci. Ind. Reports 6,* 1219 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method for dyeing fabrics of natural or regenerated cellulose with mordant dyes containing at least one salicylic acid group. Barth. I. G. Farbenindustrie A. G. Ger. P. 743 826, Jan. 11, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1201 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method for dyeing rayon from cellulose esters or cellulose ethers. B. Bock. I. G. Farbenindustrie A. G. Ger. P. 748 887, Nov. 23, 1944. PB L 70 416. *Bibl. Sci. Ind. Reports 6,* 1216 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method for improving the genuineness of colorings with substantive dyes on cellulose fibers against non-alkaline treatment. Sandoz A. G. Ger. P. 743 563, Mar. 31, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method of coloring animal fibers with complex metal compounds or mordant azo dyes from a sulfuric acid bath. Gesellschaft fur chemische industrie. Ger. P. 743 565, Dec. 29, 1943. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Addition to patent 741 219.

Method of coloring raw plant fibers with substantive dyes and by means of fiber processing agents in the boiling heat. Konrad & Zickermann. Organienburger Chemische Fabrik, A. G. Ger. P. 743 564, Dec. 29, 1943. PB L 70 421. *Bibl. Sci. Ind. Reports 6,* 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method for improving the colorability of fibers made of natural or regenerated cellulose or cellulose derivatives. Nestelberger. I. G. Farbenindustrie A. G. Ger. P. 743 567, June 21,

1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method of producing colorings and printing with pigments on fibers. Franz Nestelberger. I. G. Farbenindustrie A. G. Ger. P. 748 973, Nov. 14, 1944. PB L 70 146. *Bibl. Sci. Ind. Reports 6,* 1219 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Addition to patent 730 174.

Method of producing differential color effects in fabrics, and the fabric. Camille Dreyfus & Aaron Schwartz (to Celanese Corp. of Am.). USP 2 507 561, May 16, 1950.

Process for the production of textile and other materials having differential color effects thereon, which comprises forming a yarn or thread of uniform count from staple fibers having a basis of a single material, inserting a twist therein varying in degree and in random order along the length of the spun yarn or thread, processing the differentially twisted spun yarn or thread into a fabric, and then applying a dyestuff to the fabric.

Mordanting of cellulose-acetate rayon, nylon, and silk with potassium d-chromate. Lorraine A. Mero. (Doctoral dissertation, 1947, Iowa State College.)

More about the Standfast dyeing process. Anon. *Silk & Rayon 24,* 575-76, 578 (May 1950).

Additional information on the Standfast dyeing process is given (see also TTD: *7,* 392). In the original experiments with the Standfast process, which utilizes a molten metal in connection with dyeing, mercury was used, but due to health hazards its use was abandoned. The metal chosen as being most suitable was an alloy containing bismuth, cadmium, tin, and lead. It has a melting point of 71°C and a density of 9, and has the great advantage of no health risks. The dye liquor, wash liquor, and cloth must be a temperature greater than 71°C. An important feature of the process is that a small model of the machine can be used to match shades and recipes accurately determined for the large machine, thus obviating the need for running trial pieces through the large machine. The new process requires only one gallon of dyebath, the level of which is maintained to within less than ¼ in. with any rate of liquor consumption up to 10 gals. per minute. Rapid changing from one shade to another is possible on the new machine.

New dyeing assistant reduces redyes of nylon hosiery. Anon. *Am. Dyestuff Reptr. 39,* 382 (May 29, 1950).

Evenate, a new dyeing assistant is reported to have cut down the percentage of redyes on women's nylon hosiery from an average of 12% to one-quarter of 1%. It is expected that Evenate will also find application in the dyeing of nylon laces, underwear fabrics, knit goods, woven nylon, taffetas and sweaters. It is also said to work equally well with a selected group of acid colors as with acetate dyes.

New dyes and dyeing. W. Von Seidenfaden. *Melliand Textilber. 30,* 586-88 (Dec. 1949); *in German.*

Summary of German and foreign publications of the last months, including patent literature, dealing with dyestuffs and dyeing.

One extractor does the work of four. O. O. Scott, Jr. & Raymond Vaughan. *Textile World 100,* 94, 312, 314 (May 1950).

A new 50″ extractor with 2 sets of twin containers and an electric hoist running on an I beam have displaced 4 old 40″ extractors that were hand loaded and unloaded. The new baskets are equipped with dump bottoms. This setup has resulted in a savings in floor space, labor, current, and time.

pH control of bulk dyeings. G. H. Lister. *The Cobbler 2,* 10-11 (1949-50).

The method of pH control has been translated from the laboratory to bulk practice with distinct advantages in levelness of results, and shorter dyeing times. Though the technique requires a slight revolution in dyehouse methods, the results in increased output will justify the change.

Process for dyeing animal hairs with anthraquinone vat dyestuffs. Arthur E. Weber (to Allied Chemical & Dye Corp.). USP 2 508 203, May 16, 1950.

In a process for dyeing animal hairs with anthraquinone vat dyestuffs in reduced, alkaline vats, the step which comprises carrying out the dyeing in an anthraquinone vat liquor containing an alkali, an alkali metal hydrosulfite in an amount between about 1 and about 2½ times the amount by weight of the alkali in the liquor, and a quantity of a neutral alkali metal salt between about 5 and about 50 g per liter of vat liquor, while maintaining the vat at all times during the dyeing sufficiently alkaline to produce a slight to considerable color reaction with Clayton yellow test paper, and at temperatures between about 90°F

and about 125°F.

Review of the various methods extant for the preparation of aromatic nitro compounds, excluding those of direct nitration. H. H. Hodgson, F. Heyworth, & E. R. Ward. *J. Soc. Dyers Colourists 66,* 229-31 (Apr. 1950).

In order to overcome the limitations of direct nitration, various indirect approaches have been devised, and such methods are essential in naphthalene chemistry, where the rarer polynitro compounds can only be prepared indirectly. These methods are: a) diazotization and deamination of nitroamines; b) decarboxylation of nitrocarboxylic acids; c) oxidation of oximes, nitroso, and amino compounds; d) elimination of hydrogen halides; and e) replacement of the diazo by the nitro group.

Sodium chlorite. A. Blanchart. *Rayonne 6,* 115-17 (Apr. 1950); *in French.*

A review article on the properties and uses of sodium chlorite in the textile industry.

Solubilization of water insoluble dyes by detergents. Mother Agnes A. Green. (Doctoral dissertation, 1946, Stanford University.)

Standardization of dyes. R. W. Shackleton. *J. Soc. Dyers Colourists 66,* 221-24 (Apr. 1950).

The standardization of dyes is dependent upon the control of 3 factors: a) physical properties, b) chemical properties and c) tinctorial properties. Under control of physical properties is discussed uniformity of particle size, freedom from insoluble matter and good stability in solution in a dispersion. Under control of chemical properties chromotographic and chemical analysis of individual dyes or components are discussed. To control tinctorial factors control over such factors as resist effects, degree and types of stains, bleeding, and marking off properties is necessary. Finally, a standard technique is given to provide proper standardization which includes: a) establishment of a standard, b) evaluation of batch material prior to final standardization operation, and c) conversion of batch material to soluble dye.

Steam economy in the dyehouse. Carl E. Von Müller. *Melliand Textilber. 30,* 597-98 (Dec. 1949); *in German.*

Heat economy in textile mills that do their own finishing premises that the steam consumption peak loads originating in the dyehouse are equalized as much as possible. This can be done by storage of steam and hot water and by making a change-over, as far as possible, from direct to

indirect heating of the dyeing equipment. The installation of heating by pumping hot water in conjunction with heat storage would effect another important improvement.

Stop streaky dyeing before it happens. Harry New. *Textile World 100,* 86-7 (May 1950).

Tests run to determine the amount of blend variation necessary to produce dye bands resulted in findings that a 3% variation in content is enough to make the fabric unacceptable. Careful control of mixes, run separately through the mill, or mixing at the loom by using 2 boxes, or other such means, will reduce the danger greatly. A table showing the results of the tests in detail is given.

Treatment of nylon. Croydon M. Whittaker, Henry A. Thomas & Clifford C. Wilcock (to Courtaulds Ltd.). Can. P. 460 435, Oct. 18, 1949.

The process of rendering nylon resistant to dyeing with direct cotton dyestuffs by treating it with an acidified aqueous solution containing at least one organic compound having at least one sulfonic acid group.

Turkey red dyeing. R. Von Haller. *Melliand Textilber. 30,* 410-11 (Sept. 1949); *in German.*

Describes investigations of the behavior of polymers of ricinolic acid in the presence of metal salts and their effect on the Turkey red dyeing process. Also determined is the part played by tannic acid (which is always to be met with in old Turkey red dyeing processes) in that dyeing.

Treatment of nylon for modifying its dyeing affinity. Jas. H. MacGregor (to Courtaulds Ltd.). Can. P. 460 434, Oct. 18, 1949.

A process for modifying the dyeing affinity of nylon for direct cotton dyestuffs in an acid dyebath which comprises treating the nylon with a cationic soap.

Wool dyeing processes. G. Nitschke. *Melliand Textilber. 30,* 419-22 (Sept. 1949); *in German.*

This article present a brief summary of the technique of the various wool dyeing processes, which form the link between the dyestuff and the material to be dyed. Dyestuffs and wool enter into relationship to one another on the basis of their chemical and physical properties and form a dyeing. The theories of dyeing explain these reactions. The results of recent wool research are brought into relation to wool dyeing, thereby opening up vistas that fundamentally alter the present technique of wool dyeing. The problems of wool resistant to alkali, in particular the prob-

lem of dyeing at lower temperatures in the hitherto familiar processes and also problems of straight-line working in wool dyeing are discussed. The process of dyeing wool and carrying it out in the dyeing apparatus still usual today offers little attraction, to be sure, for the development of a continuous technique of dyeing wool. But it is absolutely necessary to perfect the technique of dyeing wool in that direction in order to do justice to present day demands for a rational method of work. The author advances suggestions for the development of continuous wool dyeing methods, but does not omit to discuss the limits of straight-line work in the field of wool dyeing.

Printing

Color harmony in printing. Hans Blum. *Melliand Textilber. 31,* 282-84 (Apr. 1950); *in German.*

The present article on color harmony in calico printing deals mainly with the difficulties of preparing patterns and the possibility of simplifying the process. A pattern drawer should as far as possible avoid painting out his drawings on paper, because the designs produced on cloth later on with the chemical dyes show different results, as a rule. The proposals made the author for arriving at harmonious color combinations and the mixtures made on the basis of the chief color tones form an essential feature of the article. It makes it easier for the colorist to work according to that system and essentially simplifies that field. The colorist knows how to divide his dyestuff groups into definite color tones and to expand them by appropriate mixtures, whereby he arrives at inexhaustible possibilities of harmonious color combination.

Method for producing printing patterns with water insoluble inorganic dyes on cellulose textile fiber surfaces due to shrinking of printed areas. Lorenz & Weiss. Heberlein & Co. A. G. Ger. P. 743 827, Jan. 3, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1201 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method of printing cellulose fibers. Chemische Fabrik Stockhausen & Cie. Ger. P. 748 974, Nov. 14, 1944. PB L 70 146. *Bibl. Sci. Ind. Reports 6,* 1219 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method of producing etched designs on dyed fabrics. Nestelberger. I. G. Farbenindustrie A. G. Ger. P. 743 568, July 21, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6,* 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Nylon gauze for screen printing. Richard Von Künzl. *Melliand Textilber. 30,* 422-24 (Sept. 1949); *in German.*

The unusual strength of nylon gauze has aroused the interest of screen printers, but its use calls for other methods of treatment and working than silk gauze. Its high elasticity necessitates rugged frames of channel-iron or angle-iron. The gauze must be stretched in wet and the lacquers applied must be highly elastic, in order to avoid cracks. Great care must be exercised in applying the photo layer, but the hardening process on nylon gauze proceeds smoothly and the work of discharging the design and reinforcing proceeds rapidly and neatly, because the gauze tends rather to repel both aqueous liquids as well as lacquers than to hold them fast. The preliminary lacquering process is the one best adapted. The advantages gained are the following: excellent photochemical preparation of the screen, stands hard usage, the prints are very good, thoroughly well adapted for the repeated application of used screens.

Registration in textile printing. Technicus. *Rayon & Syn. Tex. 31,* 87-8 (Mar. 1950); 82-4 (Apr. 1950); 78-9 (June 1950).

Some of the problems of registration arising in the printing of patterns by 1) engraved copper rollers, 2) screen printing, and 3) hand-block printing are discussed. Part I considers types of pattern, technique of registration control, and influence of roller girth and thickness on registration. Part II is a discussion of pitching, influence of cloth registration, and crepe constructions. Part III is devoted to consideration of misfitting due to differing tensions of cloth, and uses of 2 outlines.

Roller printing difficulties. Technicus. *Brit. Rayon & Silk J. 26,* 60-2 (Apr. 1950).

The appearance of white spaces in running line patterns may be caused by: 1) Small pieces of thickening agent from the print paste, 2) print paste too thick or viscous, 3) hairs broken off from the brush furnisher, 4) fluff or lint from the face of the cloth, and 5) greasy roller. The cures for these are given and discussed. Printing spun rayon fabric, crepe fabrics from copper rollers, and the tension to use on crepe fabrics are discussed. Ways of overcoming excess dyestuffs when applied in a thickened solution are explained, as are steaming of acetate crepe fabrics and how faults may be avoided. Crease marks on fin-

ished goods and some of the causes are also discussed.

Screen printing on a new short table machine. Anon. *Textile Mfg. 905,* 246 (May 1950).

The "Teximpex" screen printer, a Swedish development, is especially suitable where space is at a premium. The machine consists of 2 magazines, each with a space for 8 printing frames, and fitted with a rise and fall motion. Between the magazines is the short printing space approximately 60 in. each way. Registration is said to be excellent.

Some observations on chemical constitution versus printing performance and other properties of vat dyes. Lloyd D. Barrick. *Am. Dyestuff Reptr. 39,* P324-28 (May 15, 1950).

The structural formulas of those vat dyes that print well were examined and it was found that relations between printing quality and chemical structure existed. Factors promoting, in general, print quality are: symmetry, compactness, simplicity and presence of a single quinone system. Vat dyes of good printing quality also make good leuco sulfate esters.

Use of vegetable mucilages in screen and hand block printing. A Technical Correspondent. *Textile Recorded 67,* 85-7 (May 1950).

This is a discussion of the properties and applications of locust bean and tragacanth thickenings. Use of these substances with chrome mordant and cellulose acetate dyestuffs is noted, as are the application of stabilized azoics and leuco esters of vat dyes, and acid and direct dyestuffs by the urea process.

SPECIAL FINISHING F

Combustion retarding coating composition. Martin Leatherman. USP 2 475 626, July 12, 1949.

A composition for rendering fabric rot- and fire-resistant, comprising the following materials in substantially the proportions stated: 15 lbs. vinyl acetate vinyl chloride copolymer, 5 lbs. n-butyl methacrylate polymer, 10 lbs. tricresyl phosphate, 7 lbs. triphenyl phosphate, 10 lbs. zinc oxide, 27 lbs. acetone, 27 lbs. of a solvent consisting mainly of aromatic compounds having a specific gravity of about 0.858 and a boiling range from 265°F to 375°F, 8.7 lbs. mineral spirits, 4.2 lbs. inert pigment, and ½ lb. pentachlorphenol.

Compounds for impregnating fibrous materials and method for their production. Ernst Zerner & Peter I. Pollak (to Sun Chemical Corp.). USP 2 510 007, May 30, 1950.

A composition satisfactory for impregnating fibrous materials to impart water-repellent properties thereto which comprises the product resulting from the sequential steps of heating, at a temperature above approximately 300°C and below approximately 350°C, a material selected from the group consisting of amides of fatty acids containing 12-30 C atoms, mixtures of fatty acids containing 12-30 C atoms with nitriles of fatty acids containing the same number of C atoms as the fatty acids, and mixtures of fatty acids containing 12-30 C atoms with amides of fatty acids containing the same number of C atoms as the fatty acids, the heating being continued until the acid number of the heated material is below approximately 16.1, thereafter chloromethylating the product of the heating, and thereafter reacting the resulting chloromethylated product with a tertiary amine.

Ethyl cellulose-coated textile fabric. Wm. W. Koch (to Hercules Powder Co.). USP 2 507 107, May 9, 1950.

A textile fabric bearing a flexible, nonblocking multiple coating comprising: a wetting coat comprising ethyl cellulose having an ethoxyl content between about 40.0% and about 52.0% by weight and a plasticizer, the ethyl cellulose:plasticizer ratio being in the range between about 1:1 and about 1:3.5, the wetting coat substantially closing the interstices of the fabric without forming a continuous coating thereon: a toughening coat comprising ethyl cellulose having an ethoxyl content between about 44.5% and about 52.0% by weight and a plasticizer, the ethyl cellulose-plasticizer ratio being in the range between about 3:1 and about 1:2 but substantially greater than that of the wetting coat composition: the toughening coat forming a continuous coating on the surface of the fabric and tightly adhering thereto with substantially no impregnation thereof; and a sealing coat superimposed upon the toughening coat and comprising an ethyl cellulose having an ethoxyl content between about 40.0% and about 45.5% by weight, the ethoxyl content of the ethyl cellulose in the sealing coat being lower than the ethoxyl content of the ethyl cellulose in the toughening coat by at least 1.3%, whereby substantial migration therethrough of the plasticizers of the wetting and toughening coats is prevented.

Method and installation for shrinking moist textile strips. C. F. Ploucquet. Firma. Ger. P.

743 561, Apr. 25, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6*, 1194 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method of impregnating fabrics against fiber destroying insects. Rudolf Lehmann & Adolf Wadenklee. Ger. P. 7458 885, Nov. 13, 1944. PB L 70 146. *Bibl. Sci. Ind. Reports 6*, 1216 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Method of preparing waterproof and friction-resistant coats on fabrics. (Source missing). Ger. P. 748 886, Nov. 13, 1944. PB L 70 146. *Bibl. Sci. Ind. Reports 6*, 1216 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

New flame-retarder. *Am. Dyestuff Reptr. 39*, 279 (May 29, 1950).

The Glenn L. Martin Co. has developed a new flame-retardant compound, designated as "HPM", which is said to be durable in normal use. The fabric has a good hand and treatment with HPM does not add noticeably to the fabric's weight. Preliminary tests at the Textile Finishes Laboratory of the Army's Research and Development Depot at Philadelphia indicate that the compound is especially well adapted to meet the Army's flame-resistance requirements for clothing. DuPont has been licensed to do further work on HPM in the hope of manufacturing it commercially as a complement to Erifon.

Nylon article rendered self-sterilizing by treatment with an aryl mercuric compound and method of making it. Gaetano F. D'Alelio & Henry D. Addison (to Pro-phy-lac-tic Brush Co.). USP 2 507 299, May 9, 1950.

The method of making nylon self-sterilizing, which comprises treating nylon in solid form with a solution of an aryl mercuric salt in the presence of nitric acid.

Patent and literature survey on shrinkage control of textiles. Francis D. Horigan & Cary R. Sage. U. S. Office of the Quartermaster General, Military Planning Division. Research and Development Laboratories. Technical Library. PB 98 017s, Jan. 1950. 40 p. *Bibl. of Technical Reports 13*, 297 (June 16, 1950). Mimeo: $1.00.

Supplement No. 1 to PB 98 017. See TTD: *6*, 958.

Process for flameproofing combustible cellulosic material and product resulting therefrom. Andrew McLean & Stanley F. Marrian (to Canadian Industries Ltd.). Can. P. 461 113, Nov. 15, 1949.

A method for flameproofing a combustible cellulosic textile which comprises impregnating the textile with a 8-12% polyethyleneimine solution and then subjecting the impregnated product to treatment with crude dipentaerythritol hexaorthophosphate prepared by reacting at an elevated temperature a mixture comprising 1 part dipentaerythritol, 2 parts of orthophosphoric acid, and 2 parts of phosphorus pentoxide.

Process of rendering wool unshrinkable. Rudolf Bloch, Ladislaw V. Farkas, Kurt Goldschmid, Mendel Lewin, Isaac Schnerb & Paul Goldschmidt. USP 2 508 007, May 16, 1950.

The process of shrinkproofing wool, which comprises immersing the wool in an aqueous liquor containing hydrochloric acid and water-soluble bromate in excess over the amount of acid and bromate absorbable in the wool, which absorbable amount corresponds to about 0.08 g-equivalents per 100 g of air-dry wool, the excess of bromate (expressed as bromate ion) being not less than 1.5%, and that of hydrochloric acid (expressed as HCl) being comprised between 6 and 20%, both calculated on the weight of air-dry wool; leaving the wool in the liquor until bromate ion has disappeared therefrom in an amount of about 0.65 to 1.6 g per 100 g of air-dry wool; withdrawing the wool from the liquor and removing excess treating liquor from the wool.

Process of treating keratinous materials. Milton Harris & Alfred E. Brown (to Harris Research Laboratories). USP 2 508 714, May 23, 1950.

The process for modifying a keratinous material such as wool, hair and fur, to increase its resistance to attack by oxidizing agents, reducing agents and alkalies while preserving substantially unimpaired its mechanical properties, which comprises treating the keratinous material at a temperature between 60°C and 100°C and a pH above 7, in a liquid bath containing 3% to 100% of the weight of the keratinous material of a reducing agent for keratin which is inert to alkylene dihalides, to rupture disulfide cross linkages of the keratinous material, the bath also containing more than 0.00045 mol per gram of keratinous material of an alkylene dihalide, whereby new stable alkylene cross linkages between the peptide chains of the keratin are formed immediately upon rupture of the disulfide linkages.

Process of waterproofing textile fabrics. Milton J. Scott & Stuart H. Rider (to Monsanto Chemical Co.). USP 2 509 714, May 23, 1950.

A process for waterproofing textile fabrics

which comprises impregnating the fabrics with an aqueous emulsion of a mixed ether comprising an aminotriazine condensation product etherified with (1) from 5-2 mols of a saturated unsubstituted monohydric aliphatic alcohol containing from 1-6 C atoms and (2) from 1-4 mols of an alcohol taken from the group consisting of unsubstituted monohydric saturated and unsaturated aliphatic alcohols containing from 12-30 C atoms, and thereafter heating the impregnated fabric at from 100°C to 300°C.

Proofed rayon and nylon. Anon. *Textile Mercury & Argus 122,* 740 (May 5, 1950).

Note: Experimental work by the British Rubber Manufacturers' Research Association has led to the successful application of rubber proofing to fabrics made from continuous filament rayon and nylon yarns—materials which have proved difficult to proof satisfactorily without sacrificing their attractive appearance. Solution of the problem was simple but involved considerable experiment before it was located. It was found that the improved bond between fabric and rubber in the case of cotton and wool materials was due to the ends of the fibers projecting from the yarn being gripped in the rubber. The solution in so far as rayon and nylon fabrics are concerned has been to introduce a number of picks of staple rayon or nylon among the continuous filament. In the majority of cases it has been found that a satisfactory bond is established if every other pick is of staple yarn but this could be varied to suit the type of loom on which the cloth was woven, a two and two construction being, it is assumed, equally efficacious.

Resins can improve good fabrics. Ralph Fischer. *Papers Am. Assn. Textile Technologists 5,* 123-28 (June 1950).

The use of resin finishes for textiles began only about 20 years ago and the greatest development has occurred since 1941 when the melamine formaldehyde resins became available. Topics discussed include: Wool shrinkage control, a new method of applying melamines to wool, how resin is made, future developments, use of sheer fabrics, cotton wrinkle resistance, testing for crease resistance, and overtreatment of fabrics.

Shrinkage control of viscose rayon fabrics. I-II. J. A. Woodruff. *Rayon & Syn. Tex. 31,* 71-2 (May 1950); 51-2 (June 1950).

Part I—Shrinkage control of viscose rayon is discussed with reference to the following factors: 1) Shrinkage control possible to obtain; 2) crease

resistance obtained; 3) cost of treatment; 4) permanence of hand; 5) possible variations of hand; 6) odor; 7) chlorine retention; 8) effect on dye shade or other properties; and 9) fabric weighting. Part II includes discussion of combination treatments; strength, tear and abrasion resistance; special shoe setting in Sanforizer; action of alkali in shrinkage control; and brief mention of the possibility of producing shrink resistant viscose rayon staple fibers so that shrinkage control of a resultant fabric would require only compressive shrinkage treatment.

Study of the hindered burning of cotton treated with inorganic salts. Frederick C. Moesel. (Doctoral dissertation, 1943, Mass. Inst. of Tech.)

Textile material. Cyril M. Croft & Walter H. Hindle (to Camille Dreyfus). Can. P. 460 342, Oct. 11, 1949.

Process for the production of colored fabrics exhibiting crepe effects, which comprises mechanically impregnating a fabric containing yarns of filaments of organic derivative of cellulose, which yarns have been crepe twisted while being subjected to the action of a hot aqueous fluid, with an aqueous alcoholic solution of a dyestuff which solution comprises at least 70% by weight of a lower aliphatic alcohol which is a solvent for the dyestuff, washing the fabric and then treating the dyed fabric with a hot aqueous crepeing bath.

Textile material treating method. Louis W. Schatz. Can. P. 452 117, Oct. 26, 1948.

The method of treating textile materials, which comprises impregnating such a material with a composition including between 1½% and 15% cellulose derivative, for increasing the abrasion resistant qualities of the material, between ½% and 5% blown oil plasticizer to reduce the tendency of the cellulose derivative to stiffen such material, up to 10% fungicide, the amounts of cellulose derivative, plasticizer and fungicide combined constituting between 10% and 20% of the total weight of the composition, and organic cellulose derivative solvent and petroleum plasticizer solvent serving as a vehicle to distribute the cellulose derivative, plasticizer, and fungicide through the material, and constituting nearly the entire balance of the composition by weight.

Treatment of keratinous material. Milton Harris & Alfred E. Brown (to Harris Research Laboratories). USP 2 508 713, May 23, 1950.

The process for chemically modifying keratinous

material such as wool, hair and fur, to impart thereto enhanced resistance to the action of reducing agents, oxidizing agents and alkalies while preserving substantially unimpaired the mechanical properties of the keratinous material, which consists essentially in immersing the keratinous material for from 15 to 60 min. in a liquid bath at a pH between 3 and 9 and at a temperature in the range 60°C-100°C, the bath containing a reducing agent for keratin which is inert to formaldehyde, to rupture disulfide linkages of the keratin, the bath also containing more than 0.00045 mol per g of keratinous material of free formaldehyde, whereby new stable alkylene cross-linkages between the peptide chains of the keratin are formed immediately upon rupture of the disulfide linkages.

Use of sodium silicates in processing synthetic textiles. A. B. Middleton. *Rayon & Syn. Tex. 31,* 75-6 (June 1950).

The applications of sodium silicates in processing synthetic textiles are noted; details of several applications are given. Based on references to the journal and patent literature.

Wool treatment. John B. Rust. Can. P. 460 063, Oct. 4, 1949.

The method of treating wool which comprises heating the wool in an aqueous emulsion containing a synthetic butadiene polymer and a non-cationic emulsifying agent in the presence of a conditioning electrolyte, the pH of the bath being below 7, the bath being substantially stable in the absence of the wool, the amount of the butadiene polymer being sufficient to give substantial shrink-proofing properties to the wool.

TESTING AND MEASUREMENT G

Analysis of cellulose derivatives. Leo B. Genung. *Anal. Chem. 22,* 401-05 (Mar. 1950).

Cellulose derivatives, because of their high polymeric, carbohydrate structure, require modification of conventional methods of organic analysis. Conditions of temperature, time and reagent concentration must be kept within prescribed limits in order to avoid interfering side reactions and to obtain accurate results. The analysis of cellulose acetate, mixed esters of cellulose, cellulose nitrate, methyl and ethyl esters of cellulose is discussed.

Approach to a more realistic cotton detergency test. Herbert L. Sanders & Jos. M. Lambert. *J. Am. Oil Chemists 27,* 153-59 (May 1950).

The accepted Launder-Ometer test for cotton detergency is analyzed briefly and its shortcomings noted, in particular its departure in design and mechanical action from usual household agitator-type washing machines. Tests were conducted with 4 detergents in 1) practical wash tests, and 2) Launder-Ometer tests. The practical wash tests, in which roll-towels were soiled and washed, gave performance ratings for the detergents which agree well with ratings given the detergents in independent field tests in public laundries and homes. The Launder-Ometer tests ranked the detergents in a completely different order. In view of the conflicting results an attempt was made to develop a more realistic cotton detergency test based on the principle that any really accurate method must duplicate service conditions as closely as possible. A synthetic soil, based on analyses of representative soils from several cities, was applied to test fabrics in the dry state by utilizing a modified Schiefer Abrasion Meter. Test swatches were washed in a specially constructed laboratory washer which utilized paddles which were scaled-down models of those used on household machines. The comparative ratings of the 4 detergents, when tested by this method, were the same in all runs and in good agreement with roll-towel tests.

Artificial daylight lighting. Paul Rabe. *Melliand Textilber. 31,* 278-80 (Apr. 1950); *in German.*

It is extremely important to create an apparatus for artificial illumination that will serve as a substitute for daylight at the seasons of the year when lighting conditions are poor, and the author describes the experiments that have been made for that purpose, dealing with the pros and cons of the question and pointing out, in particular, that the mercury lamp does not present a practical solution, because it may give rise to completely misleading results.

Assessment of oil content in the process of jute manufacture. S. C. Roy & M. K. Sen. *Textile Mfr. 905,* 219-21 (May 1950).

A comprehensive survey of individual mill practice was made to determine the amount of oil added at the softening stage of jute processing. Investigations were also made into the oil content of the fiber at progressive stages of processing. It was found that the amount of oil used varied from 2.09 to 7.39%; approximately 45% of the oil was lost during carding, but negligible loss occurred in subsequent operations. Any oil added at the softener in excess of 2-3% serves to increase oil wastage by a proportionate amount, and does not

result in any improvement in the quality of yarn produced.

Cellulose ester viscosities by the ball-drop method. Carl J. Malm, Leo B. Genung & Geo. B. Lapham. *Anal. Chemistry 22,* 656-61 (May 1950).

The ball-drop method is useful for measuring viscosities of concentrated solutions of cellulose esters. Several ball-drop viscometers are described, which are easily constructed from simple apparatus, are useful over a considerable range of viscosity, and are easily calibrated. Procedures for the measurement of viscosities and determination of conversion factors are presented. The Faxen equation is particularly useful for the latter purpose.

Centrifuge method for measuring the swelling of fibers. J. M. Preston & M. V. Nimkar. *Bull. de l'Institut Textile,* No. 18, 53-8 (Apr. 1950); *in French.*

The swelling of fibers is discussed in relation to the factors which control it and the properties which it affects. The centrifuge method has been coming increasingly into use for the measurement of the swelling of fibers, but it has the defect that the values obtained are a measure of both imbibed water which causes swelling and capillary water which is held between fibers. It is shown that the use of surface active agents reduces the capillary water. Modified in this way the centrifuge method gives better estimates of the water causing swelling. Data are given for a number of fibers using both the normal and modified centrifuge methods.

Fastness of alkaline milling of dyeing and prints. Schweizerischer Verband für die Materialprüfungen der Technik, Kommission 25, Richtlinienblatt A 2571. *Textil-Rundschau 4,* 298 (Aug. 1949); *in German.*

A standard method for evaluating fastness to milling uses the Launder-Ometer or other apparatus; 10 g soap per liter for 30 min. at 40°C represents a light milling, and 50 g soap and 10 g soda per liter for 2 hr. at 40°C a severe milling.

Identification of natural or artificial fibers by means of dyeing. le C. Pinte & Goujet. *Rayonne 6,* 59-65 (Jan. 1950); *in French.*

The present study makes a comparison of the various polyfiber reagents proposed by several dyers. The colorimetric measurements were made on the Toussaint photocolorimeter. Viscose, acetate and cuprammonium rayon were among the yarns tested.

Investigation of formaldehyde-treated fibers. A. Schaeffer. *Textil-Praxis 4,* 287-89 (June 1949); *in German.*

Describes the carbazole test for the detection of formaldehyde in fibers, e.g., Kaurit WF 110, Kaurit KF, or thiourea- or melamine-formaldehyde condensates. The type of finish can be determined by further tests for nitrogen, urea, sulfur, and melamine; details of these tests are also given.

Proposed change in the AATCC test method for rewetting agents. Carl R. Blumenstein. *Am. Dyestuff Reptr. 39,* 317-20 (May 15, 1950).

Describes a series of tests which showed that the AATCC Test Method for Rewetting Agents gives widely varying results if the swatches are impregnated at different temperatures. Impregnation of swatches at 70°C showed greater rewetting speed than impregnation at 20°C, the specified temperature. Rewetters which showed up poorly at 20°C showed improvement of several hundred per cent in rewetting speed when impregnated at 70°C. Also studied were the effects of conditioning, ageing, added starch and weighters, and test-droplet size on speed of rewetting. It is proposed that the AATCC Test Method be changed to 70°C impregnation. The compounds tested were chosen to represent 5 broad classes of compounds that are customarily used as textile finishes and Sanforizing aids.

Seeing molecules. Anon. *Chem. Industries 66,* 664-65 (May 1950).

Describes briefly an electron micrograph technique that permits seeing and measuring of polysilicone molecules. The method, which is applicable to all high polymers, consists of chilling the specimen until it is brittle, breaking it, and casting a negative replica of gelatin or polyvinyl alcohol film. Silica is then evaporated onto the film and the soluble film dissolved away, leaving a positive replica. The electron microscope magnification of 20,000 is increased by photographic enlargement to 100,000, at which enlargement 100 Angstrom units show up as 1 mm.

"Soiled wool" fabric available. Anon. *Am. Dyestuff Reptr. 39,* 382 (May 29, 1950).

A soiled wool fabric, "FDS Artificially Soiled Wool," has been announced by Foster D. Snell, Inc. The artificial soil used in the wool has been compounded to closely resemble the natural soil that is found in soiled woolen garments.

There are practical limits to cotton testing in the mill. E. H. Helliwell. *Textile World 100,* 101, 314, 316 (May 1950).

The concensus of a group of cotton manufacturers is that the experienced cotton classer is the most valuable cotton testing facility in the mill. Other devices were used but seldom. Cotton classers are good enough for fiber length, detection of excessive short fibers, fiber fineness, fiber strength, and grade in most practical situations. Fiber-length arrays are used to obtain uniformity ratios, and exact mean length. Some cotton suppliers make extensive tests before buying cotton from the grower. A point of balance must be maintained between testing and cost of testing.

Understanding of shrinking sought in wool study. Anon. *Textile World 100,* 99, 292, 294, 296 (May 1950).

(From a report by Harris Research Laboratories, Washington, D.C.) Wool fibers have scales pointing in one direction; therefore they have a higher coefficient of friction in one direction than in the other. The difference between these 2 is the "friction difference," and the sum is the "friction sum." An instrument has been developed to secure accurate and reproducible measurements of surface friction on individual wool fibers. This friction does not seem to vary with fiber diameter. Tests on shrink-resistant chemical treatments showed they raised the lower friction coefficient. Increased pH of wash liquors seems to decrease shrinkage. Resin treatment affected air permeability, but not breaking strength. Tables show results of tests.

Clothing and fabrics G 1

Effect of nondurable aluminum salt—wax emulsions on the wear resistance of textiles. Seamon J. Tanenhaus & Mary E. Darby. *Am. Dyestuff Reptr. 39,* 349-56 (May 29, 1950).

Three field service tests were used to investigate and evaluate claims that the use of nondurable aluminum salt—wax emulsions decrease the amount of soiling and increase the serviceability of textile items. Conditions of the tests were: 1) severe wear and moderately severe laundering; 2) moderate wear and very severe laundering; and 3) moderate wear and laundering. Another objective of the study was to determine whether certain laboratory tests had merit for the prediction of serviceability. From results obtained it was concluded that the use of a non-durable aluminum salt—wax emulsion for increasing wear resistance is not warranted for garments subjected to severe wear or laundering. The use of such compounds may be justified for fabrics subjected to moderate wear and launderability. It was also found that field serviceability cannot be predicted by any of the laboratory tests investigated.

Effects of laundering on size and shape of sheer window curtains. Hazel M. Fletcher, Martha L. Hensley & Jane F. Gilliam. *J. Home Econ. 42,* 447-48 (June 1950).

Describes tests made to determine what happens to the size and shape of sheer curtains when they are washed and to determine what method of drying is preferable. The curtains tested included: all-cotton, viscose rayon, acetate rayon, cotton and viscose, and nylon. The curtain materials were washed by hand and rinsed, then dried by one of 3 methods—on stretchers, rods and hand-ironed. Practically all of the fabrics shrank excessively—some as much as 10-15% in length and 15-18% in width. In some instances the curtains could not be stretched to their original length. Conclusions reached of interest to textile manufacturers were: 1) Curtain fabrics should carry labels giving purchasers definite information as to the amount of shrinkage. Appropriate allowances for shrinkage in both homemade and ready-made curtains should be provided so that the curtains can be adjusted to the window after being laundered. 2) Curtain fabrics with good dimensional stability are needed.

Factors related to the serviceability of nylon marquisette glass curtains. Thelma L. Erwin. *J. Home Econ. 42,* 445-46 (June 1950).

Describes results obtained from a serviceability study of nylon marquisette glass curtains over a period of 8 months. The curtains tested changed very little in color and were satisfactory in most respects. There were statistically significant differences in the breaking strength of curtains exposed to the north as compared with those exposed to the east. The breaking strength of the former was greater.

From the loom to the public with emphasis on cloth analysis. C. Mayland. *The Cobbler 2,* 14-18 (1949-50).

The testing procedures used by a large clothing firm are described. Methods of preparing specimens and other testing techniques are given for the following tests: 1) Weight of the cloth; 2) testing for strength—Goodbrands machine; 3) slippage test—Goodbrands strength testing machine; 4) friction wear testing—Goodbrands machine; 5) fastness of dye to sunlight—Fade-O-Meter; 6) fastness of dye to perspiration; 7) tests for fastness to rubbing; 8) test for shrinkage; 9) Bundesmann water repellency tester—Good-

brands; 10) yarn testing—Goodbrands.

Measurement of the thermal transmission of textile fabrics. Report of the task group on thermal transmission to Subcommittee B-1, Committee D-13, ASTM on textile test methods. Gerald Winston & Stanley Backer. U. S. Office of the Quartermaster General, Military Planning Division. Research and Development Branch. PB 99 634, June 1948. 20 p. graphs, tables. *Bibl. of Technical Reports 13,* 297 (June 16, 1950). Mimeo: $.50.

Report includes a brief review of the literature on the subject together with detailed findings.

Notes on methods used at the Fatigue Laboratory to evaluate the thermal insulation provided by cold weather clothing. H. S. Belding, R. C. Darling, S. Robinson, E. S. Turrell & D. R. Griffin. Harvard Univ., Fatigue Laboratory. PB 99 291, Sept. 1943. 13 p. tables. *Bibl. of Technical Reports 13,* 105 (Mar. 17, 1950). Microfilm $1.75, Photostat $2.50.

Physiological adaptations of man to cold. Cold weather clothing, physiological tests of the protection afforded men in the extreme cold by U. S. Army Arctic clothing and electrically heated flying suits. Arlie V. Bock. U. S. Office of Scientific Research & Development. Committee on medical research. Monthly progress report No. 14. PB 99 036, Jan. 1944. 2 p. *Bibl. of Technical Reports 13,* 106 (Mar. 17, 1950). Microfilm $1.25, Photostat $1.25.

Service test of overcoat, field, OD 7, w/removable liner. Wm. E. Stringer & Franklin E. Ashburn. U. S. Air Proving Ground, Elgin Air Force Base, Fla. PB 99 425, Oct. 1949. *Bibl. of Technical Reports 13,* 106 (Mar. 17, 1950). Microfilm $1.25, Photostat $1.25.

Instruments and instrumentation G 2

Cone and plate viscometer. R. S. Higginbotham. *J. Sci. Instruments 27,* 139-41 (May 1950).

Describes a novel and simple viscometer, developed by The British Cotton Industry Research Association, for the determination of the flow curves of anomalous fluids over a wide range of rates of shear. The instrument is easy to fill and clean, and has proved particularly useful for measurements at rates of shear of 10,000 sec.$^{-1}$ and upwards. The cone and plate viscometer is ordinarily used at room temperature. For precise work a constant-temperature room is needed, but is unnecessary with the aqueous pastes of starches

and gums for which the instrument was primarily designed.

Continuous viscosity control. W. M. Trigg. *Chem. Eng. 57,* 156-57 (May 1950).

A discussion of the principle of the instrument developed by Westinghouse for the continuous measurement of the viscosity of a fluid. It is based on the Poiseulle equation which indicates that viscosity would be indicated continuously by the pressure drop across a tube of given dimensions if the fluid velocity were kept constant. The instrument is designed to measure pressure drop as the dependent variable which is a function of fluid viscosity.

Controlled humidity in textile mills. Anon. *Textile Mercury & Argus 122,* 778-79 (May 12, 1950).

An electronic hygrometer (type RH I), produced by Fielden (Electronics) Ltd., provides and indication of relative humidity without any calculations and without any temperature corrections. The indication attains equilibrium in 30-40 sec., or less if subjected to a draft. The instrument represents an electrical analogy of the two-bulb hygrometer with the advantage of very tiny temperature bulbs which give an almost immediate response to any changes in RH value.

Faults in wool textiles. F. F. Elsworth. *The Cobbler 2,* 20-4 (1949-50).

This discussion of faults is concerned with the different methods and techniques used in the examination of testing for faults in woolen goods. Topics covered are: microscopical examination, chemical analysis, staining and dyeing tests, metal faults, faults caused by differences in dyeing affinity, mineral oil, and scouring.

Fielden Drimeter. John Varley. *Am. Dyestuff Reptr. 39,* P367-68 (May 29, 1950).

This is a brief description of the Fielden Drimeter and the Fielden C2 Automatic Control written by a representative of the manufacturer.

Measurement or variation of physical states of materials. Maurice K. Taylor & Alfred D. Knowles (to Ferranti Ltd.). USP 2 508 081, May 16, 1950.

This invention relates to the measurement or variation of physical states of materials such as the dampness of cloth. The apparatus comprises 2 tuned circuits one of which is the "standard" circuit having a "Q" value corresponding to the required dampness, and the other of which con-

tains the 2 condenser plates between which the material to be tested is inserted, which circuits are tuned to different resonant frequencies, an oscillator supplying oscillations to the circuits, means for varying the frequency of the oscillations through 2 frequency bands which include the 2 resonant frequencies, and means to derive a voltage which is proportional to the difference in magnitude of current output pulses from the 2 tuned circuits. Any suitable means may be provided for indicating the magnitude of this derived voltage or for utilizing it to correct any deviation in degree of dampness or other physical state of the material under test from the required value.

Method for determining wear and tear of threads, strings, yarn, cards, tube-like textures, etc. Sippel Deutsche Acetat-Kuntseiden A. G. Ger. P. 743 865, Jan. 5, 1944. PB L 70 431. *Bibl. Sci. Ind. Reports 6*, 1203 (Sept. 26, 1947). Enlargement print $1.50; *in German.*

Drawings included.

Model "1B" bobbin tester. Anon. *Whitin Rev. 15*, 10-11 (May 1948).

Describes an instrument for measuring the eccentricity of cotton and wool spinning bobbins. The device consists of a slowly revolving spindle and 2 mounted indicators calibrated in thousandths of an inch. The spindle is driven by a reduction drive electric motor which can be provided for either 110 or 220 volt AC operation. Excessive spindle vibration, bolster wear, spindle wear, poorly wound yarns, and lower production speeds are some of the results of extreme bobbin eccentricity.

Moisture indicator for webs. John S. Seney (to E. I. duPont de Nemours & Co.). USP 2 508 045, May 16, 1950.

In accordance with the present invention, a continuous measurement is made of the electrical resistance of a portion of the web, such as the thread sheet of the slasher, which in turn is a function of its moisture content. For this purpose, the entire thread sheet of the slasher is passed between a pair of stainless steel rolls located behind the last drier can. The rolls are connected in an electrical circuit with a condenser which is successively charged and discharged at a rate dependent upon the electrical resistance of the portion of the thread sheet extending between the rolls. An electrical counter means is provided for counting the number of times the condenser is charged and discharged during a predetermined period of time, this number representing a measure of the total moisture content. Means is also provided for measuring the charging time of the condenser and indicating the same on a suitable scale which is graduated directly to read moisture content. Means may also be provided to actuate a signalling or control device when the variation in moisture content exceeds predetermined limits.

Recording yarn tensiometer. Anon. *Rayon & Syn. Tex. 31*, 92 (June 1950).

A recording strain gage tensiometer, developed by the American Viscose Corp., measures and records yarn tension in both the research laboratory and the mill. The instrument consists of a yarn guiding mechanism, a strain gage of great sensitivity, which converts a variable yarn electrical signal that feeds through an amplifier to an electric recorder. The amplifier and recorder are placed on a control cabinet, the pickup head on universal swiveling arms supported on a steel column, and the whole mounted on a steel plate on casters. The equipment provides a reliable means of charting any variable that affects tension—e.g., moisture, RH, lubricants, guides and tensions or cyclic variations of twist or strain. The equipment has been used to study tensions in twisting, winding, spooling, quilling, warping, and tricot knitting.

Tensiometer. L. Hermanne. *Rayonne 6*, 55-8 (1950); *in French.*

A description of the Zellweger tensiometer containing detailed diagrams of its construction and graphical and tabular data obtained through its use.

TEXTILE MILLS H

Anti-friction bearings demand high-quality lubricants. Carl A. Berg. *Textile World 100*, 97, 325-28 (May 1950).

Ball and roller bearings now usually need lubrication only twice per year. This is a result of research into bearings and greases. Some applications still cause trouble, however. Two of these are oscillating motions which cause friction oxidation, and high temperature applications. Loads on oscillating applications should be reduced, a lubricant of low viscosity should be used, and balls should be submerged in the lubricant. High-temperature applications have not been satisfactorily solved with greases yet. Circulating-oil lubrication or water-cooled units should be used.

Application of infrared in the textile industry. Josef Schneider. *Melliand Textilber. 31*, 284-86 (Apr. 1950); *in German.*

The present article on infrared deals with a subject about which a great deal has been written here and abroad, mostly in the form of a popular report or as publicity, while the author has attacked the problem critically from the viewpoint of fiber histology. He comes to the conclusion, based on the fact that infrared rays respond differently to material of different colors, that the application of infrared in the textile industry is not adapted for various fields in which its use might be contemplated, more especially in the wool industry, on the basis of the course of development up to the present.

Graniteville starts production at Gregg plant. Anon. *Textile Bull. 76,* 65-8, 70 (May 1950).

The new Gregg dyeing and finishing plant of the Graniteville Co. contains the best possible systems of materials handling, straight-line production, and over-all operating efficiency. Features of the new plant are described and illustrated in a series of photographs.

Greenwood's Harris plant—a weaver's dream. Jas. T. McAden, Jr. *Textile Bull, 76,* 54, 56, 58, 60, 62, 65 (May 1950).

The plant and equipment of Greenwood Mills' new Harris Plant, for the weaving of filament rayon fabrics, are described. The plant, designed to produce approximately 360,000 yards of cloth per week, features the modern principles of construction and machinery.

Incoming material inspection pays off at Alexander Smith. Jesse de la Rama. *Textile World 100,* 71, 330-33, 339-40 (May 1950).

Material inspection was started at Alexander Smith in the mid-30's. Items used as raw material for the finished product, such as various purchased yarns, dyestuffs, oils, starches, and raw wool are tested. Testing is done on a sampling basis and charts of the product quality are kept. Typical charts for yarn and dyestuff are reproduced as illustrations. This program of quality control has resulted in better cost accounting and a more consistent quality. Some suppliers have been eliminated for certain products; others helped to bring their product into the limits desired. The quality control department works with the purchasing department in selecting sources of supply.

Machinery developments in England. J. S. Barke. *Indian Textile J. 60,* 340-42 (Jan. 1950).

A new dye testing machine developed by I.C.I. Dyestuffs Division is claimed to bring laboratory dyeing into line with the modern trend of mechanization. This machine is thermostatically controlled, and the water is scientifically agitated to give readily reproducible conditions and permit the dyeing of 12 different samples without necessity for strict attention by personnel. Other developments noted are: the new type of cover for cylinder drying machines, developed by the Brit. Cotton Ind. Res. Assn., and a new moquette loom.

Many factors govern range-drive selection. C. V. Topliffe. *Textile World 100,* 88-91, 303, 304, 306, 308, 310, 312 (May 1950).

In some textile installations, drives must be synchronized on stopping, starting, and speeds between the units, and controlled from a single push button. Constant-voltage field-weakening type, called field control, and adjustable-voltage are 2 types of DC equipment used. Both types are explained and circuit diagrams of each are given. Diagrams for automatic acceleration to a preset speed and horsepower output curves are also included. Factors to consider in selecting a range-drive, such as power, efficiencies, and type are discussed. Advantages and disadvantages of the 2 types are listed.

THE "MERCURY" DICTIONARY OF TEXTILE TERMS. Cop. by the Staff of "Textile Mercury". Manchester, England, Textile Mercury Limited [1950]. 524 p. Price: £3 3s 0d.

This dictionary, according to the publishers, contains over 14,000 definitions. Of special interest are the definitions of practically all raw materials, including many little-used fibers, and the definitions and illustrations, of basic cotton, silk, and wool fabric constructions. A check was made against the *Callaway Textile Dictionary* of a number of terms selected at random and it was found that each dictionary contained definitions the other did not. *The Mercury Dictionary* is a major contribution to textile literature and one which will find widespread use among all who have an interest in textiles.

NEIWPCC conducting research projects on textile wastes. Anon. *News Letter (NEIWPCC) 1,* 6 (May 1950).

Under a grant to the New England Interstate Water Pollution Control Commission under Public Law 845, 2 research projects relating to the textile industry have been underway since February, it being agreed that pollution abatement of wastes from this industry is a general problem of importance in the New England Compact area. The first project is a survey of the textile industry and

study of the prevalent types of textile waste effluents in order to give an overall picture of the prevalence of textile wastes and the relative importance of each in the pollution problem. The second project is the preparation of a comprehensive and critical bibliography of the treatment of wastes from the textile industry so that selection of the most promising type of research work on these specific wastes will be facilitated. These projects are being carried out at the Rhode Island State College and Wesleyan University respectively. Progress reports on the projects were reviewed by the Commission at their meeting in March and a recent conference indicated that the final reports will be submitted by June 1, 1950.

Procedure for correct water-tank maintenance. Anon. *Industry & Power 58*, 80-2 (June 1950).

Regular inspection and repair of plant facilities that supply clean water to drinking fountains and processing equipment can be achieved by a scheduled maintenance program. Suggestions are given for establishing such a program, and causes of common troubles with water tanks and accessories are given in a table.

Radio isotopes and textiles. Anon. *Dyer 103*, 541-42 (May 5, 1950).

Four applications of radioisotopes of interest to the textile industry are: 1) The weight per unit area of a material can be measured continuously during the process of manufacture, 2) the concentration of a particular component in a complex mixture can be measured continuously, 3) static electricity can be eliminated, and 4) micro quantities of material can be accurately measured. A brief discussion is given of each.

Research projects at Connecticut universities. Anon. *News Letter (NEIWPCC) 1*, 5 (May 1950).

The Connecticut State Water Commission is sponsoring a number of sewage and industrial waste research projects. The University of Connecticut is studying methods of removing dye colors from textile mill wastes.

Shades of Minetto. Anon. *Esso Oilways 12*, 14-17 (May 1950).

The history of window shades is noted and the processing methods used at the Minetto (N. Y.) plant of The Columbia Mills, Inc., are described briefly. The plant also finishes fabrics into moviescreens, adhesive tapes and plasters, tag, label, and sign cloths and other products.

Systematic checking assures uniform processing. Richard Crossley. *Textile World 100*, 139, 230, 232, 234 (Apr. 1950).

Mills should have a definite maintenance program which will check productivity and mechanical condition of every machine periodically. A sliver tester, lap meter, stroboscope, fiber-array equipment, tachometer and a well trained engineer should all be used in this program. Product should be checked from the bale right on through the mill. Labor loads and therefore costs are dependent on the running quality of the goods in process. Several cases are used as illustrations of what to look for and what can be done.

Technical advances in textile machines. A. K. Astbury. *Textile J. Australia 24*, 990-92 (Jan. 1950).

Technical advances in textile machinery as a result of wartime researches into metals and alloys are described. Some of the machines described include looms for weaving narrow lightweight, single shuttle fabrics, and for the production of standard and bulk-produced rayon cloths. Also described is a new automatic single-thread machine for testing strength and elongation, a vat dye regulator, an automatic cloth guider, an automatic pirn (bobbin) winder, a high draft speed frame, a double deck uptwisting machine with speeds up to 12,000 rpm as well as other laboratory and plant equipment.

Textile finishing plant completes sixth major expansion. J. C. Porter. *Industry & Power 58*, 88-90, 158 (May 1950).

Starting in 1929 with steam capacity of 75,000 lb. per hr, and generating capacity of 1500 kw. this company made successive additions to the plant until in 1947 capacities were 350,000 lb. of steam per hr. and 3500kw. When greater steam and electrical demands occurred as a result of new processing machinery installed in the mills, standby power plant equipment proved to be inadequate. Therefore, a second 150,000 lb. per hr. pulverized-fuel fired boiler was installed, together with a 5,000 kw. non-condensing extraction-type turbine-generator. The latter unit, generating at 2400 v, was tied into the existing 600 v power plant bus through a 2400/600 v transformer bank. Factors affecting selection and installation of this new equipment are discussed. Also discussed is the method of utilizing older boiler auxiliaries for compatible operation with new units.

Transcribed time studies. W. D. Jones. *Research Engr.*, 5-6 22-4 (Jan. 1950).

Describes use of the wire recorder in making time

studies. The observer times the employee by tapping the back of the microphone with a tapper worn on a finger, and records observations and comments, thus eliminating note taking. When the recording is played back a revolution counter is connected by a pulley to the wire recorded so that 1,000 units pass the counter window during a minute of playback. This permits measuring elements in terms of one-thousandths of a minute. The comments and other pertinent data recorded by the observer may be transcribed at leisure.

Wool scouring wastes project being conducted at Lowell Textile Institute. Anon. *News Letter (NEIWPCC) 1,* 11 (May 1950).

Note: Under provision of the Federal Water Pollution Control Act, the Massachusetts Department of Public Health received a special industrial waste study grant for an investigation of methods of treatment and disposal of wool scouring wastes. The project is being carried out at the Experiment Station of Lowell Textile Institute in coordination with work at the Lawrence Experiment Station of the Department. The field covered by this project is so extensive that it is anticipated the work will extend over a period of several years with progress reports being published periodically. The wool manufacturers in New England have expressed considerable interest in the experiments being carried on and are cooperating in the enterprise through their technical personnel and by contributions of materials and equipment.

CHEMISTRY AND PHYSICS OF TEXTILE MATERIALS I

Action of heat on wool. H. Zahn. *Textil-Praxis 5,* 7-10 (Jan. 1950).

This is a review of the literature concerning the action of heat on wool. Dry wool is much more resistant to heat than moist wool. Wool which has been predried can be heated to 140-150° C for a short time without degradation occurring if no products are present which attack wool protein.

Alkyl aryl sulfonate-builder mixtures: detergent properties. Reynold C. Merrill & Raymond Getty. *Ind. Eng. Chemistry 42,* 856-61 (May 1950).

Measurements of the ability of alkaline builders to prevent the deposition of iron oxide, ilmenite black, and raw umber on cotton cloth show that sodium silicates and phosphate are more effective

than sodium carbonate or hydroxide for this purpose. Dodecyl benzene sodium sulfonate (Santomerse 3) suspended more iron oxide than the builders, less ilmenite than the silicates or phosphates but usually more than the carbonate or hydroxide, and less raw umber than almost any builder. Some silicate-phosphate mixtures appeared to show synergism in preventing deposition. The amount of soil removed by synthetic detergent-alkaline builder mixtures and their relative efficiency varied considerably for 3 kinds of "standard" soiled cloth. For many soils, detergent-builder mixtures perform as well or better than detergents alone at a saving in cost. For a particularly complex synthetic soil, synthetic detergent-tetrasodium pyrophosphate-sodium meta- or sesquisilicate mixtures showed large synergistic effects.

Analytical studies of starches and starch pastes. Jas. W. Faucett. (Doctoral dissertation 1948, Univ. of Indiana.)

Chemical structure of cellulose and starch. Lejaren A. Hiller, Jr. (Doctoral dissertation, 1947, Princeton University.)

Creep behavior of plasticized polyvinyl chloride: liquid polymer plasticizers. M. Dand Ali, Herman F. Mark & Robt. B. Mesrobian. **Diphosphate ester plasticizers.** Richard H. Oliver, Norman M. Wiedehorn & Robt. B. Mesrobian. *Ind. Eng. Chemistry 42,* 484-91 (Mar. 1950).

Two new groups of plasticizers, the liquid vinyl polymers and the diphosphate esters, have been tested for tensile creep and found satisfactory over appropriate ranges of temperatures and concentration. Though the work was done on films, the permanence of these plasticizers suggests possible use in vinyl polymer textiles.

Detergent action. Watler Von Kling. *Melliand Textilber. 30,* 412-19 (Sept. 1949); *in German.*

Micellae begin to form in solutions of detergents above the critical concentration c_k. X-ray investigation carried out by K. Hess and his school has led to more accurate conceptions of the structure of these micellae and his findings have recently been confirmed and expanded by W. D. Harkins and other members of his team. Hydrocarbons and the like which have been added are made soluble or are solubilized by building them into the micellae. According to the researches of W. C. Preston, the individual ion of the detergent, and not the micella, is to be regarded as the bearer of

the detergent effect. In accordance with that view, the maximum detergent effect is attained at about the critical concentration c_k, which corresponds with practical experience. Experiments with detergents, the micellae of which have previously been synthesized, confirm Preston's theory. In spite of that, it would appear to be interesting to take up the problems of the formation of the micellae, because it would seem to be adapted to throw light upon differences between the various classes of detergents.

Effect of cellulose on the pH of NaCl and KCl solutions. John H. Hoback. 55 p. (Doctoral dissertation, 1947, University of West Virginia.)

Effect of crimp on fiber behavior. Part I—The determination of fiber irregularities and the concepts of the single-fiber bulking capacity. L. W. Rainard & Dorothea Abbott. *Textile Research J. 20,* 301-07 (May 1950).

A method for determining fiber irregularities is suggested which recognizes that there are many instances of crimpiness which cannot be defined in terms of frequency and amplitude measurements. An attempt was made to arrive at a correlation between roving diameters and single-fiber properties based on a geometric analysis of a roving. A laboratory technique for studying the bulking capacity of wools is presented which may be useful as a technique for evaluating a factor of potentially greater technical significance than crimp —the bulking tendencies of irregularly shaped fibers.

Effect of crimp on fiber behavior. Part II—Addition of crimp to wool fibers and its effect on fiber properties. J. L. Barach & L. W. Rainard. *Textile Research J. 20,* 308-16 (May 1950).

The importance of crimp in natural wools is noted and the wear and coverage of crimped *vs.* uncrimped materials are demonstrated. A method of crimping wool artificially is described as is the production equipment which is illustrated schematically. Theoretical expressions are developed for stress-concentration efforts and are compared with experimental results. A theory is advanced for the mechanics of the crimping operation.

Enzymatic hydrolysis of cellulose. (114 p.). Curtis S. Walseth. (Doctoral dissertaion, 1948, Lawrence College (Institute of Paper Chemistry).)

Heat resistance of laminated plastics: evaluation in terms of critical thermal instability temperature. L. E. Sieffert & E. M. Schoenborn. *Ind. Eng. Chemistry 42,* 496-502 (Mar. 1950).

A laboratory procedure for evaluating the heat resistance of laminated plastics is described, and results are given for laminates based on paper, cotton fabric, glass mat, and glass fabric. Weight loss measurements under controlled heating were employed to determine a critical thermal instability temperature, which ranged from 140° to 350°C for various materials.

Hydrolysis and crystallization of cellulose. O. A. Battista. *Ind. Eng. Chemistry 42,* 502-07 (Mar. 1950).

Weight loss and degree of polymerization were studied as functions of time, using both mild (cool) and drastic (boiling) conditions of acid hydrolysis, for samples of purified cotton, bleached linters, linters pulps, wood pulp, textile rayon, tire yarn, Fortisan, Fiber G, and 2 experimental rayons. Percentage crystallinity (based on weight loss) and leveling-off degree of polymerization were measured by hydrolysis in 2.5 N hydrochloric acid at 105°C for 15 minutes, and were shown to depend on whether the original hydrolysis conditions were mild, drastic, or mild plus drastic. Mechanisms were proposed to account for the crystallization of cellulose chains simultaneously with chain splitting under conditions of mild hydrolysis. The effect of crystallization on hydrolysis was found to be more pronounced for regenerated than for native celluloses.

Mechanism of microbiological decomposition of cellulose. R. G. H. Siu. *Textile Research J. 20,* 281-88 (May 1950).

The mechanism of microbial action on cellulose is described as consisting of the following: The microorganism, upon germination, secretes enzymes which first digest the cuticle; the hyphae of fungi penetrate the secondary cellulosic wall directly into the lumen, where profuse growth occurs. Bacteria adhere to the outer surface and pit their way inward. However, with both fungi and bacteria the digestion of cellulose occurs at the point of immediate contact with the organism. The amorphous cellulose is attacked more rapidly than the crystalline. The native cellulose molecule is first converted by an enzyme, which the author calls cellulase, into a linear polysaccharide; the linear chain is then hydrolyzed by another enzyme into glucose, without the intermediary of cellobiose. The proposed mechanism is significantly different from that of Pringsheim and of Winogradsky. Based on the picture presented, it ap-

pears that topo-chemical modification is very promising as a means of imparting simultaneously 2 or more properties to cotton fabrics, one of which is mildew.

On the structure of resistant peripheral components of animal hair. Helmut Zahn & Helmut Haselmann. *Melliand Textilber 31,* 225-30 (Apr. 1950); *in German.*

This article describes further experiments on the subject of the structure of resistant peripheral components of animal hairs. The authors succeeded in mechanically isolating smooth bands from horsehair which are localized beneath the scale cover and by reason of their double refraction and their fibrillary structure must be regarded as covering zone of the spindle cell layer. Also the intermediate membranes, such as can be gained by heating human hair in normal caustic soda lye, when examined under the phase contrast microscope proved to be associations of the outermost cells of the cortex. The components of sheep's wool which are insoluble in 2N caustic soda at ordinary temperature consist of scale cover and cortex skin. Other methods of isolating the intermediate membrane described in the literature were not examined and therefore nothing can be said about its histological composition. Finally, the nomenclature of the histological components of wool are critically discussed. (With 10 phase contrast and 2 bright-field photomicrographs.)

Reinforcement of polyester laminates with fabrics. Milton Gallagher, H. H. Goslen & Raymond B. Seymour. *Modern Plastics 27,* 111-14, 118, 120, 172 (Mar. 1950).

The physical properties of fabric-reinforced polyester laminates were determined, and the relative effects of the reinforcing members compared. Many of the fabric reinforcements were laminated with a single resin, while 4 were tested with 4 other polyester resins. Glass fibers and regenerated cellulose gave the best overall results; noteworthy isolated properties were shown by laminates of nylon, high tenacity rayon, Steralon (a resin bonded cellulosic web), cotton sheeting, and linen. Detailed data on the laminates tested are presented in tables.

Relation of physical characteristics and chemical structure of cellulose derivatives. Emil Ott. *Chemistry & Industry No. 53,* 915-22 (Dec. 31, 1949).

With cellulose and its derivatives as illustrations

of typical long-chain organic polymers, the fundamental properties of such materials are explained. Moisture sensitivity is correlated with degree and type of substitution on the cellulose chain. Softening point varies with degree and type of substitution, with plasticizer additions, and with chain length. Tensile strength depends on chain length, orientation and crystallinity, as well as on size and polarity of substituent groups. Solution of long-chain polymers is preceded by swelling, and both are affected by amount and type of substitution (as related to type of solvent) and orientation of the chains. Plasticizers which are poor solvents for cellulose derivatives produce a two-phase material, with sub-microscopic regions of plasticizer-rich phase entangled in a strong mesh of slightly-solvated material. All these characteristics are adequately accounted for by modern high-polymer theory.

Relaxation of stress in wool fibers. S. M. Katz & A. V. Tobolsky. *Textile Mfr. 905,* 238-42 (May 1950).

See TTD: *7,* 421.

Small angle x-ray scattering by cellulose fibers: experimental study of the orientation factor in model filaments and rayons. A. N. J. Heyn. *J. Am. Chem. Soc. 72,* 2284-285 (May 1950).

A presentation of data obtained on the scattering by rayon and cotton by the application of a special technique. The most important feature studied is the relationship between experimentally controlled changes in particle orientation and the resulting scattered intensity.

Stabilization of zein filaments: curing with formaldehyde in acidic nonaqueous mediums. C. Bradford Croston. *Ind. Eng. Chemistry 42,* 482-84 (Mar. 1950).

Essentially anhydrous curing mixtures consisting of an inert solvent, formaldehyde (or substances liberating it), and strong acid have a strong stabilizing effect on zein fibers. Appropriate solvents are dioxane, toluene, tetrachloroethane, and Stoddards solvent, and acids may be sulfuric, hydrochloric, trichloroacetic, or dichloroacetic. The cure is complete in about 15 minutes at 100°C and produces irreversible formaldehyde crosslinks, possibly with tyrosine residues. The stabilization is most evident in the reduction of shrinkage, which is reflected in unusual strengths of the fiber after boiling in acid dye baths.

Structure and polymolecularity of cellulose. The Svedberg. *Svensk Papperstidning 52,* 157-64

(Apr. 15, 1949); *in Swedish.*

This is a review of recent physiochemical work on cellulose at the Institute of Physical Chemistry, Uppsala. To obtain information on the frequency curves of cellulose, a combination of fractional precipitation of the nitrates, ultracentrifugal sedimentation, and osmotic measurements were studied. Degradation experiments (hydrolysis, and ultrasonic waves) were performed together with electron microscopy, electron and x-ray diffraction studies.

Sub-cuticle membrane—a recently discovered morphological component of the wool fiber. P. Alexander & C. Earland. *Textile Research J. 20,* 298-300 (May 1950).

In a communication to the editor, a method is reported for separating a membrane which may be identical with the "sub-cutis" of wool. Wool was treated with peracetic acid, which was shown to confine its attack almost exclusively to the oxidation of the disulfide bond to sulfonic acid groups. After more than 90% of the cystine was oxidized with this reagent, the wool became freely soluble in dilute ammonia except for a resistant fraction which represents between 7% and 10% of the wool substance and which is in the form of a membrane. The insoluble residue can be repeatedly retreated with peracetic acid followed by ammonia extraction without dissolving any of it.

Synthetic fibers from natural proteins: reactions with formaldehyde. David Traill. *Chemistry & Industry No. 2,* 23-30 (Jan. 14, 1950).

Properties of natural and regenerated protein fibers depend on the number and types of side groups on the polypeptide chains. Protein synthetic fibers, lacking the strong hydrogen bonding present in silk and nylon as well as the disulfide cross-links of wool, must secure good strength and durability by artificial linkages produced by a formaldehyde "tanning" treatment. The reactions occurring definitely involve the amino and amide groups, and under some conditions other portions of the protein molecule. Possible reactions with each group are reviewed, and both difficulties and areas of progress in research on tanning of proteins are outlined.

Technology of fungi, mold and mildew: a clearing-house collection of published information on microbiological infection and torpical deterioration as related to industrial and military materials. Covers periodical references, books and and patents, with special emphasis on the

period 1927-1947. Includes a subject index to the periodical references given. *Bibl. of Technical Reports 13, News Letter* (May 12, 1950). (U. S. Dept. of Commerce, O.T.S.)

Textile chemistry and physiology. I-II. O. Mecheels. *Melliand Textilber. 30,* 1-2 (Jan. 1949); 553-57 (Dec. 1949); *in German.*

Part I—In addition to its concern with the finishing of textiles and the chemistry of fibers, textile chemistry should be broadened to all factors which exert an influence on the human body when textiles are worn. The properties of a textile garment are retention of warmth; perspiration- and air-permeability; protection against absorption of radiation; protection against dust and water. These properties can be influenced by textile chemical and technological factors. Part II—in this article, the author shows that the requirements of the human body have not yet succeeded in penetrating generally into the theory of textile finishing. A number of examples, methods and measurements are given which serve to show the path that leads to physiologically aligned textile finishing.

Wax content as related to surface area of cotton fibers. Paul B. Marsh, Henry D. Barker, Thos. Kerr & Mary L. Butler. *Textile Research J. 20,* 288-97 (May 1950).

An investigation was made to determine whether inherent or environmental differences in wax content, of sufficient magnitude to be of practical significance, exist among American upland cottons. Several Sea Island and a few Indian cottons were tested for purposes of comparison. The per cent wax was found to be closely proportional to surface area per unit weight of fiber as determined by the air-flow method of Sullivan and Hertel. Data are presented showing the relationship between these 2 fiber properties. The wax-surafce relationship is not entirely free of complicating factors, as an apparent increase in wax content as measured by the Conrad method was found to occur, under some circumstances, during weathering of the fiber in the field before harvest. This phenomenon is in need of further investigation.

Wetting characteristics of cellulose and cellulose derivatives. B. Roger Ray. (Doctoral dissertation, 1946, University of Michigan.)

TEXTILE EDUCATION AND RESEARCH J

AATCC general research committee meeting.

Anon. *Am. Dyestuff Reptr. 39*, P373-76 (May 29, 1950).

A brief account is given of the General Research Committee meeting held April 14, 1950, in New York. The following reports are given: Activities at the Lowell laboratories; reports of committees on flammability, standard soils, fire resistance, vocational training, continuous wool scouring, water resistance, fastness to light, snag resistance, fastness to washing, and wool shrinkage.

Hosiery trade's research effort. David Starkie. *Textile Mercury & Argus* 95, 97-8 101, 106 (Suppl. Mar. 1950).

The organization and program of the Hosiery and Allied Trades Research Assn. are discussed. Two major problems selected for initial study are: 1) an investigation of the factors which cause variations in dimensions in the knitted product with the intention of reducing such variations; and 2) a study of the properties of knitted products and an investigation of how these properties change when various yarns, knitting structures, and treatments are used.

New Publications

The Cobbler is an annual publication of the Huddersfield Local Centre of the Guild of Technical Dyers, Huddersfield, England. In *The Cobbler* are reported the lectures presented before the Centre each season. Volume II covers the 1949-50 season.

The New England Interstate Water Pollution Control Commission, 73 Tremont St., Boston 8, Mass., has inaugurated the publication of a quarterly *News Letter* as a medium of presenting plans and progress in providing cleaner waters in the New England states and those sections of New York which has waterways common to New England. Items of interest appearing in this publication will be noted in the TEXTILE TECHNOLOGY DIGEST; the *News Letter* will be designated by the abbreviation: *News Letter (NEIWPCC)*.

Notice

The United States Department of Agriculture Library, Washington 25, D. C. has announced that effective June 15, 1950, the revised price schedule for photocopying service is as follows:

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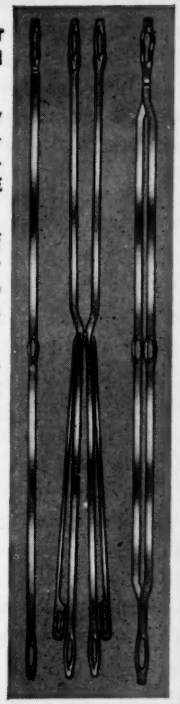

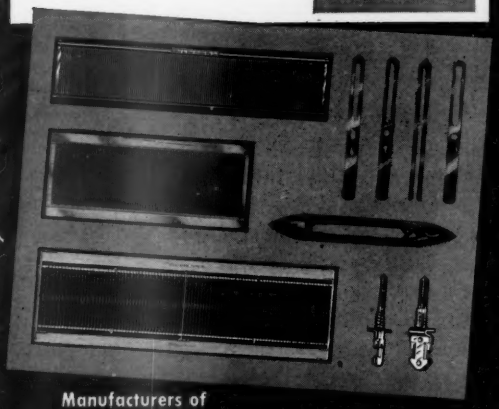

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